

THE BOSTON Medical and Surgical JOURNAL

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The Massachusetts Medical Society

PROCEEDINGS OF THE SOCIETY

First Day, June 8, 1926

ALL of the exercises of the one hundred and forty-fifth anniversary were held in the Hotel Kimball, Springfield. The program was sent to every Fellow of the Society a month in advance and was printed in the official organ, the *Boston Medical and Surgical Journal*, in the issue of May 20. The exercises began with a get-together luncheon of the secretaries of the District Medical Societies at which 14 secretaries sat down. There was much interchanging of views and a promotion of friendly spirit at this second luncheon of the kind. All agreed that such a getting together was of advantage to the best interests of the Society. The Sections of Surgery, Tuberculosis, and Obstetrics and Gynecology held their well attended meetings during the afternoon in different rooms in the hotel. (The numbers in attendance and the officers elected for the ensuing year will be found at the end of these Proceedings.) The Supervising Censors held their annual meeting in the Supper Room at 5 o'clock followed by the annual meeting of the Council at 5.30 p. m., 93 Councilors being present. (See Proceedings of the Council.) The Cotting Lunch was served immediately after the Council meeting. At 8.15 p. m. the Shattuck Lecture was given in the Ball Room by Dr. William Darraach, of New York, with the subject: The Interrelations of the Physicians and the Hospital. Dr. George Burgess Magrath, Medical Examiner of Suffolk County, gave an enjoyable talk, illustrated by lantern slides, in the Supper Room after the Shattuck Lecture. His title was: Some Professional Experiences. There was dancing and a buffet supper following.

Second Day, June 9, 1926

The Sections of Medicine, Pediatrics, and Radiology and Physiotherapy held their meetings Wednesday morning, beginning at nine o'clock. The annual meeting of the Society was held in the Ball Room at 12, noon, about a hundred auditors being present. The record of the last meeting was read and approved by vote. The Secretary stated that the membership of the Society was as follows: Total number of Fellows on June 10, 1925, 4194. Deaths during the year, 72; resignations, 21; deprivations of the privileges of fellowship, 15, making a total loss of 108. There had been restored to the privileges of fellowship by the Council during the year, 10; readmitted by the Censors, 2; new Fellows, 189; total gain, 201; net gain, 93, making the total membership on June 9, 1926, 4287. The President called for any delegates from the other New England State Medical Societies and Dr. T. W. Luce of Portsmouth, New Hampshire came forward, representing as an ex-president, the New Hampshire Medical Society. He referred felicitously to the founding of the New Hampshire Society in 1791 by Josiah Bartlett and others, many of them Massachusetts men, along the lines of the Massachusetts society, Dr. Bartlett being the first president; a certain proportion of the members of the latter society having been born in New Hampshire or having attended Dartmouth. Both societies were of one family. He brought the greetings of New Hampshire to the annual meeting of the sister state. On motion of Dr. Moore it was Voted: That the Society wishes to express its thanks to the Committee of Arrangements, to the officers of the Sections, and particularly to the Local Committee of Arrangements, to the members of the Hampden District Medical Society, also to the ladies, for all they have done to make this meeting such a splendid success. After a brief recess Dr. Charles F. Painter of Newton delivered the annual discourse, on the topic: Educational Requirements for Twentieth Cen-

tury Practice. Who Should Determine Them, and How May They be Best Achieved?

The Annual Dinner was held in the Ball Room at 2.45 p. m., the attendance being about 375. The President introduced the following speakers: Hon. Wellington Wells, President of the Senate, The Commonwealth of Massachusetts; Hon. Fordis W. Parker, Mayor of Springfield; Morris S. Sherman, Editor of the *Springfield Union*; Rt. Rev. Thomas F. Davies, Bishop of Western Massachusetts, and Dr. David W. Parker, President of the New Hampshire Medical Society. (See the *Boston Medical and Surgical Journal*, June 17, 1926, pages 1142-1147, for abstracts of the speeches.)

There was a good attendance at both the scientific and the commercial exhibits on the seventh floor of the hotel during the two days of the meeting. The total registered attendance during the anniversary was 706; in addition about 185 ladies were present.

The Sections had the appended attendance and elected these officers for the year 1926-1927:

SECTION OF MEDICINE: Attendance, 200. *Chairman*: Ayres P. Merrill, Pittsfield. *Secretary*: Hervey L. Smith, Springfield.

SECTION OF SURGERY: Attendance, 520. *Chairman*: Charles G. Mixer, Boston. *Secretary*: Richard H. Miller, Boston.

SECTION OF TUBERCULOSIS: Attendance, 53. *Chairman*: Adam S. MacKnight, Attleborough. *Secretary*: Randall Clifford, Boston.

SECTION OF PEDIATRICS: Attendance, 75. *Chairman*: Arthur R. Crandell, Taunton. *Secretary*: J. Herbert Young, Newton.

SECTION OF OBSTETRICS AND GYNECOLOGY: Attendance, 80. *Chairman*: Richard S. Benner, Springfield. *Secretary*: Arthur F. G. Edgelow, Springfield.

SECTION OF RADIOLOGY AND PHYSIOTHERAPY: Attendance, 180. *Chairman*: Frank B. Granger, Boston. *Secretary*: Frederiek W. O'Brien, Boston.

Adjourned at 5 p. m.

WALTER L. BURRAGE,
Secretary.

ADMISSIONS RECORDED FROM JUNE 10, 1925,
TO JUNE 9, 1926

Year of Admission	Name	Residence	Medical College
1926	Adams, John Goldthwaite, Salem		22
1925	Adelstein, Leo Joel, Palmer		12
1926	Agnew, John Robert, Chicopee		25
1926	Akin, Moses, New York City		12
1926	Allen, Edwin Howard, Boston		11
1926	*Apellan, George Solomon, Belmont		37
1926	Archibald, William Charles, Cambridge		24
1925	Attridge, Arthur James, Cambridge		11
1926	Bacon, John Lowell, Southborough		33
1926	Baker, Henry Merton, Boston		38
1926	Bakst, Jacob Benjamin, Fall River		12
1926	Barron, David, Brockton		12
1926	Bennett, William Howard, Jr., New Bedford		12
1925	Bergeron, George Gernon, Ludlow		39
1925	Berman, Philip Grossman, Lowell		12

1925	Bishop, Franklin Lee, Leicester	19
1926	Bowmar, Harris Ewing, Boston	10
1926	Brassau, Arthur Clarence, Worcester	12
1926	*Brigham, Harold Kingsbury, Southbridge	40
1926	Broyles, Elizabeth Louise, Wellesley	41
1925	Burke, John Robert, Holyoke	42
1925	Bushold, Charles, Lawrence	12
1926	Butler, David Mathew, Brockton (readmitted by Censors)	12
1926	Byers, Randolph Kunhardt, Milton	11
1925	Cardi, Alphonso Blaise, Worcester	12
1926	Cicma, Haralambie George, Worcester	10
1925	Clapp, Herbert Codman, Brookline	11
1925	Clark, George Stillman, Worcester	11
1926	Cleary, George Herbert, Tewksbury	12
1926	Cleaves, Edwin Nelson, Boston	11
1925	Cochran, John Joseph, Framingham	11
1926	Cohen, Abram Irving, Roxbury	12
1926	*Cohen, Morris Aaron, Cambridge	2
1925	Colcord, Marshall, Worcester	10
1925	Connelly, Ambrose Joseph, Worcester	12
1925	Cooper, Edward, Worcester	20
1926	Copeland, Newall, Pittsfield	24
1926	Costa, Domizio Augustine, Revere	12
1926	Cowles, Dwight W., Westford	12
1926	Crotty, Martin Francis, Boston	10
1926	Crowley, Thomas Francis, North Adams	11
1925	Curtin, William Edward, Plymouth	25
1926	Davis, Max, Boston	11
1926	Davis, Myron Henry, Saugus	11
1925	Dechter, Max Archibald, Westfield	12
1925	Dibbins, Samuel Albert, Lowell	12
1925	Dodd, Katharine, Worcester	6
1925	Doherty, John Leo, Lowell	12
1926	Draper, Russell Tucker, Worcester	12
1926	Dressler, Morris Lawrence, Cambridge	12
1925	Dufault, Francis Xavier, Gardner	12
1925	Fenton, Herbert Ambrose, Lawrence	22
1925	Fielden, John Seymour Cromwell, Fall River	20
1926	Findlay, Francis McRae, Boston	11
1925	Fisher, David, Boston	11
1925	Flynn, William Anthony, Amesbury	12
1926	Foster, George Benjamin, Lynn	19
1925	Fox, Samuel, Holyoke	12
1926	Frankowski, Pauline Hanyszewska, Chicopee	12
1925	Franks, Helen Lucile Williamson, Roxbury	4
1926	Fred, Gus Bernard, Boston	11
1926	*Fried, Boris Mark, Brookline	43
1926	*Furbush, Leroy Cleveland, Saugus	44
1926	Gale, Eugene Manson, Merrimac	2
1926	Gane, William Howard, Ashland	18
1925	Gardner, Stuart Needham, Peabody	11
1925	Genest, Aloria Henry, Holyoke	12
1925	Gilbert, Milton John, Fall River	2
1926	*Golden, Henry, Brookline	44
1925	Goodall, Edwin Baker, Wollaston	25
1925	Goulding, Timothy Francis, Boston	11
1925	Grandmaison, Albert Joseph, Haverhill	12
1925	Greany, John Vincent, Springfield	12
1925	Green, David Samuel, Roxbury	12
1926	Greenleaf, Henry Simpson, Brookline	19
1926	*Guilmette, Eugene Joseph, Lawrence	45
1926	Haggerty, Francis Ignatius, Springfield	20
1926	Hall, George Morris, Brockton	11
1926	*Halpern, Harry, Peabody	2
1926	Hannigan, Robert Clarence, Amesbury	5
1926	Hardwick, Rachel Louise, Quincy	10
1926	*Harvey, Frank T., Milford	40
1926	Hayes, Arthur Warren, Greenfield	44
1926	Herschel, Heinz, New Bedford	11
1925	Hough, Garry de Neuville, Jr., Springfield	11
1926	*Hull, Ira Butler, Gloucester	11
1926	Johns, Janette Pearl, Worcester	10
1925	Johnson, Warren, Roxbury	11
1925	Johnson, William Joseph, Lowell	46
1926	Kane, Theodore J., Everett	12
1925	Kaplan, Julius Arthur, Northampton	11

*Action of Committee on Medical Education and Medical
Diplomas.

DEATHS REPORTED FROM JUNE 10, 1925, TO JUNE 9, 1926

Admitted	Name	Place of Death	Date of Death	Age
1899	Bartlett, Charles Watson	Hanover	Aug. 9, 1925	60
1901	Beebe, Theodore Chapin	Paris, France	Nov. 1, 1925	51
1914	Bell, Richard Dana	Somerville	Dec. 6, 1925	38
1882	Bigelow, Charles Edwin	Leominster	Feb. 1, 1926	71
1897	Bliss, Jesse Leonti	Holyoke	Apr. 11, 1926	56
1898	Blodgett, John Hammond	Boston	Feb. 18, 1926	53
1897	Bottomley, John Taylor	Boston	Dec. 17, 1925	56
1873	Bradford, Edward Hickling	Boston	May 7, 1926	77
1892	Bryant, Giles Waite	West Somerville	Nov. 8, 1925	68
1874	†Bryant, Lewis Lincoln	Cambridge	July 6, 1925	75
1925	Burisch, John Livingston	Worcester	Jan. 13, 1926	28
1911	Cady, Frederic Benjamin Moers	Rutland	Nov. 12, 1925	44
1872	†Canedy, Francis Joel	Shelburne Falls	Mar. 30, 1926	79
1869	†Clark, David	Springfield	Jan. 29, 1926	82
1896	Dean, Ralph Denniston	Taunton	May 11, 1926	53
1898	DeLange, Charles Petit	France	Nov., 1925	64
1884	Devine, William Henry	Milton	Feb. 5, 1926	65
1921	Douglass, Edmund Stowa	South Barre	Aug. 29, 1925	37
1867	†Dutton, Charles	Wakefield	Feb. 16, 1926	86
1887	Ehrlich, Henry	Boston	Feb. 5, 1926	60
1877	Elliot, John Wheelock	Needham	Sept. 13, 1925	72
1908	Farr, Irvin Harris	Holyoke	Apr. 23, 1926	43
1874	Garland, George Minot	Boston	Mar. 2, 1926	77
1892	Gile, John Morton	Hanover, N. H.	July 16, 1925	61
1920	Gilman, William Henry	Cambridge	Jan. 2, 1926	29
1896	Guild, Thomas Ezra	Mattapan	Oct. 9, 1925	57
1881	Halloran, Michael Joseph	Portland, Me.	Sept. 2, 1925	71
1868	†Hildreth, John Lewis	Winchester	Nov. 27, 1925	85
1882	Hitchcock, Edward	New Haven, Conn.	Dec. 25, 1925	71
1909	Hubbard, Edward Dana	Gloucester	Nov. 24, 1923	44
1885	Jackson, Fred William	Jefferson, Me.	June 4, 1926	67
1884	Jarvis, William Furness	Boston	Dec. 25, 1925	68
1883	Jenkins, Charles Edwin	Lynn	Apr. 23, 1926	71
1887	Jillson, Franklin Campbell	Jamaica Plain	May 7, 1926	62
1906	Joyce, Thomas Francis	Lawrence	Oct. 29, 1925	68
1925	Kelleher, William Laurence	Marlboro	Jan. 16, 1926	32
1917	Kelley, Eugene Robert	Dorchester	Sept. 27, 1925	42
1872	†LaVigne, Alfred Willis	Nashua, N. H.	Sept. 7, 1919	79
1915	Leonard, Zenas Lockwood	Pittsfield	Apr. 4, 1926	68
1889	Lincoln, Jacob Read	Millbury	Sept. 28, 1925	63
1904	Little, John Mason	Brookline	Mar. 23, 1926	50
1881	Mixter, Samuel Jason	Grand Junction, Tenn.	Jan. 19, 1926	70
1892	Morse, Charles Ellsworth	Wareham	Feb. 16, 1926	59
1922	Nichols, Alvord Gates	Roxbury	May 18, 1926	32
1901	O'Connor, John Francis	Worcester	Aug. 1, 1925	57
1895	Olin, Francis Henry	Southbridge	Jan. 15, 1926	70
1894	Parker, Frank Howard	Hamilton, Mont.	Jan. 10, 1926	70
1896	Perry, Henry Joseph	Needham	Feb. 4, 1926	55
1897	Randall, Clifford Walcott	Worcester	Dec. 28, 1925	65
1906	Robbins, Chandler	Weston	Apr. 6, 1926	47
1888	†Robinson, Lucy Morton	Brookton	June 12, 1925	85
1914	Rounseville, Wilfred Ellsworth	Attleborough	Nov. 21, 1925	43
1876	†Sanborn, Edwin Aaron	Somerville	Nov. 14, 1925	76
1870	†Sanders, Charles Barton	Lowell	Apr. 30, 1921	77
1908	Savignac, Arthur Noel	Boston	Aug. 13, 1925	63
1923	Sawyer, Herbert Houston	Dorchester	Nov. 13, 1925	55
1894	Shannon, Nathaniel Vaughan	Cambridge	Feb. 2, 1926	59
1920	Shaw, Frederick King	Concord	Apr. 5, 1926	55
1909	Spooner, Lesley Hinckley	Brookline	June 28, 1925	43
1874	Stedman, Henry Rust	Brookline	Feb. 19, 1926	76
1884	Stickney, George Augustus	Beverly	Mar. 22, 1926	67
1925	Straw, Amos Gale	Manchester, N. H.	Mar. 13, 1926	62
1921	Suffa, George Alson	Boston	Sept. 6, 1925	67
1900	Taylor, James, Jr.	Portland, Me.	Sept. 2, 1925	56
1892	Tilton, Frank Herbert	East Boston	Mar. 24, 1926	70
1868	†Trull, Washington Benson	Annisquam	June 22, 1925	82
1887	Tuttle, Albert Henry	Brookline	Mar. 1, 1926	64
1886	Wakefield, Albert Tolman	Sheffield	Nov. 4, 1925	72
1907	Wilcox, Henry Hopson	"Out West"	1920	
1880	Williams, Harold	St. Augustine, Fla.	Apr. 3, 1926	72
1913	Wilson, Charles Moore	Salem	Dec. 9, 1925	42
1895	Young, Edgar Williams	Everett	Jan. 11, 1926	68

Total number of deaths, 72.

†Indicates Retired Fellow.

OFFICERS OF THE MASSACHUSETTS MEDICAL SOCIETY FOR 1926-1927

ELECTED BY THE COUNCIL, JUNE 8, 1926

President: James S. Stone, 286 Marlborough Street, Boston.
Vice-President: John M. Birnie, 14 Chestnut Street, Springfield.
Secretary: Walter L. Burrage, 182 Walnut Street, Brookline.
Treasurer: Arthur K. Stone, Auburn Street, Framingham Center.
Librarian Emeritus: Edwin H. Brigham, Watertown.

STANDING COMMITTEES FOR 1926-1927

ELECTED BY THE COUNCIL, JUNE 8, 1926

OF ARRANGEMENTS

L. S. McKittrick W. T. S. Thorndike James Hitchcock
E. P. Hayden H. Q. Gallupe
T. H. Lanman

ON PUBLICATIONS AND SCIENTIFIC PAPERS

E. W. Taylor R. B. Osgood F. T. Lord
R. M. Green A. C. Getchell

ON MEMBERSHIP AND FINANCE

D. N. Blakely Algernon Coolidge Samuel Crowell
Gilman Osgood Homer Gage

ON ETHICS AND DISCIPLINE

David Cheever W. D. Ruston S. F. McKeen
W. C. Keith Kendall Emerson

ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS

C. F. Painter J. F. Burnham A. G. Howard
R. L. De Normandie H. P. Stevens

ON STATE AND NATIONAL LEGISLATION

J. S. Stone E. H. Stevens F. E. Jones
T. J. O'Brien J. M. Birnie

ON PUBLIC HEALTH

Victor Safford E. F. Cody R. I. Lee
T. F. Kenney F. G. Curtis

ON PUBLIC INSTRUCTION

A. P. Merrill W. P. Bowers W. H. Robey
R. I. Lee F. W. Snow Conrad Wesselhoeft
F. S. Hopkins

DELEGATES AND ALTERNATES TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

DELEGATES

ALTERNATES

F. B. Lund, Boston. W. H. Robey, Boston.
E. F. Cody, New Bedford. F. W. Anthony, Haverhill.
H. G. Stetson, Greenfield. L. A. Jones, Swampscott.
C. E. Mongan, Somerville. Gilman Osgood, Rockland.
J. F. Burnham, Lawrence. A. R. Crandell, Taunton.
R. I. Lee, Boston. J. M. Birnie, Springfield.

PRESIDENTS OF DISTRICT MEDICAL SOCIETIES

VICE-PRESIDENTS (Ex-Officio)

Arranged according to seniority of fellowship in the Massachusetts Medical Society

E. H. Trowbridge, Worcester.
C. W. MacDonald, Norfolk.
E. P. Joslin, Suffolk.
G. L. West, Middlesex South.
G. H. Janes, Hampden.
G. F. MacKay, Berkshire.

A. S. MacKnight, Bristol North.
A. C. Smith, Plymouth.
W. G. Curtis, Norfolk South.
W. E. Currier, Worcester North.
R. R. Stratton, Middlesex East.
R. V. Baketel, Essex North.
W. B. Segur, Hampshire.
M. L. Alling, Middlesex North.
P. F. Leary, Franklin.
S. E. Donovan, Bristol South.
C. H. Phillips, Essex South.
F. O. Cass, Barnstable.

COUNCILORS, 1926-1927

ELECTED BY THE DISTRICT MEDICAL SOCIETIES AT THEIR ANNUAL MEETINGS, APRIL 15 TO MAY 15, 1926

NOTE:—The initials M. N. C. following the name of a Councilor indicate that he is a member of the Nominating Committee. V. P. indicates that a member is a Councilor by virtue of his office as President of a district society and so Vice-President of the general society. C. indicates that he is chairman of a standing committee.

BARNSTABLE

F. O. Cass, Provincetown, V. P.
W. D. Kinney, Osterville, M. N. C.
E. S. Osborne, West Dennis.

BERKSHIRE

G. F. MacKay, Dalton, V. P.
C. S. Chapin, Great Barrington, M. N. C.
Henry Colt, Pittsfield.
A. P. Merrill, Pittsfield, C.
J. B. Thomes, Pittsfield.
G. H. Thompson, North Adams.

BRISTOL NORTH

A. S. MacKnight, Attleborough, V. P.
W. H. Allen, Mansfield.
W. O. Hewitt, Attleborough.
F. A. Hubbard, Taunton, M. N. C.

BRISTOL SOUTH

S. E. Donovan, New Bedford, V. P.
E. F. Cody, New Bedford, M. N. C.
A. B. Cushman, South Dartmouth.
E. F. Curry, Fall River.
C. J. Leary, New Bedford.
J. H. Lindsey, Fall River.
W. A. Nield, New Bedford.
G. L. Richards, Fall River.
I. N. Tilden, Mattapoisett.
T. F. Warren, Fall River.

ESSEX NORTH

R. V. Baketel, Methuen, V. P.
E. S. Bagnall, Groveland.
J. Forrest Burnham, Lawrence.
F. H. Coffin, Haverhill.
W. W. Ferrin, Haverhill.
T. R. Healy, Newburyport, M. N. C.
G. E. Kurth, Lawrence.
F. S. Smith, North Andover.
F. W. Snow, Newburyport.
W. D. Walker, Andover.

ESSEX SOUTH

C. H. Phillips, Beverly, V. P.
F. W. Baldwin, Danvers.
J. A. Bedard, Lynn.
J. P. Donaldson, Salem, M. N. C.
H. K. Foster, Peabody.
W. T. Hopkins, Lynn.
W. G. Phippen, Salem.
P. P. Johnson, Beverly.
J. F. Jordan, Peabody.
A. N. Sargent, Salem.
R. E. Stone, Beverly.
J. W. Trask, Lynn.

FRANKLIN

P. F. Leary, Turner's Falls, V. P.
H. G. Stetson, Greenfield.
G. P. Twitchell, Greenfield, M. N. C.

HAMPTDEN

G. H. Janes, Westfield, V. P.
J. B. Atwater, Westfield.
E. P. Bagg, Jr., Holyoke, M. N. C.
J. M. Birnie, Springfield, Vice-President.
A. L. Damon, North Wilbraham.
E. L. Davis, Springfield.
H. D. Gafney, Ware.
M. B. Hodskins, Palmer.
C. W. Jackson, Monson.
E. A. Knowlton, Holyoke.
W. C. Leary, Springfield.
A. G. Rice, Springfield.
J. P. Schneider, Palmer.
M. I. Shea, Chicopee Falls.
H. L. Smith, Springfield.

HAMPSHIRE

W. B. Segur, Enfield, V. P.
A. J. Bonneville, Hatfield.
J. G. Hanson, Northampton, M. N. C.
E. D. Williams, Easthampton.

MIDDLESEX EAST

R. R. Stratton, Melrose, V. P.
G. F. Dow, Reading.
Richard Dutton, Wakefield.
C. R. Henderson, Reading, M. N. C.
E. S. Jack, Melrose.
A. E. Small, Melrose.

MIDDLESEX NORTH

M. L. Alling, Lowell, V. P.
J. F. Boyle, Lowell, M. N. C.
W. B. Jackson, Lowell.
J. H. Lambert, Lowell.
J. A. Mehan, Lowell.
J. B. O'Connor, Lowell.
T. A. Stamas, Lowell.

MIDDLESEX SOUTH

G. L. West, Newton Centre, V. P.
E. A. Andrews, Newton Centre.
W. L. Barnes, Lexington.
E. H. Bigelow, Framingham Centre, Ex-Pres.
A. H. Blake, West Somerville.
H. E. Buftum, Somerville.
W. T. Burke, Medford.
W. H. Crosby, Brighton.
D. F. Cummings, Natick.
F. G. Curtis, Newton.
I. J. Fisher, West Newton.
C. B. Fuller, Waltham.
F. W. Gay, Malden.
G. W. Gay, Chestnut Hill, Ex-Pres.
James Glass, Framingham.
F. A. Higginbotham, Watertown.
L. H. Jack, West Newton.
H. J. Keaney, Everett.
R. W. McAllester, Everett.
Edward Mellus, Newton.
C. E. Mongan, Somerville.
J. P. Nelligan, Cambridge.
C. F. Painter, Newton, C.
A. C. Potter, Cambridge.
W. A. Putnam, Cambridge.
H. L. Seavey, Cambridge.
J. W. Sever, Cambridge.
F. G. Smith, Somerville.
E. H. Stevens, Cambridge, M. N. C.
A. K. Stone, Framingham Centre, Treasurer.
J. H. Taylor, Cambridge.
H. W. Thayer, Newtonville.
Fresenius Van Nuys, Weston.

H. P. Walcott, Cambridge, Ex-Pres.
H. R. Webb, Arlington.
Alfred Worcester, Waltham, Ex-Pres.

NORFOLK

C. W. MacDonald, Roxbury, V. P.
H. D. Arnold, Brookline.
F. J. Bailey, Dorchester.
D. N. Blakely, Brookline, C.
W. L. Burrage, Brookline, Secretary.
Samuel Crowell, Dorchester.
F. S. Cruickshank, Brookline.
O. G. Daniels, Canton.
D. G. Eldridge, Dorchester, M. N. C.
M. H. A. Evans, Dorchester.
H. J. Fitz-Simmons, Jamaica Plain.
C. S. Francis, Brookline.
G. H. Francis, Brookline.
J. B. Hall, Roxbury.
A. H. Hodgdon, Dedham.
Joseph Holzman, Roxbury.
I. R. Jankelson, Roxbury.
G. W. Kaan, Boston.
Bradford Kent, Dorchester.
C. J. Kickham, Brookline.
E. B. Lane, Jamaica Plain.
J. W. Lane, Dorchester.
W. A. Lane, Milton.
E. N. Libby, Jamaica Plain.
A. A. MacDonald, Dorchester.
Edward Martin, Roxbury.
H. W. Martin, Roxbury.
S. F. McKee, Brookline.
Harriet E. Rogers, Norwood.
Victor Safford, Jamaica Plain, C.
F. S. Schmidt, Roxbury.
D. F. Sughrue, Roxbury.
Lucia P. Vickery, Jamaica Plain.
H. F. R. Watts, Dorchester.
P. R. Withington, Milton.

NORFOLK SOUTH

W. G. Curtis, Wollaston, V. P.
C. S. Adams, Wollaston, M. N. C.
C. A. Sullivan, South Braintree.
O. H. Howe, Cohasset.
D. A. Bruce, Atlantic.

PLYMOUTH

A. C. Smith, Brockton, V. P.
H. A. Chase, Brockton, M. N. C.
J. H. Drohan, Brockton.
F. W. Murdock, Brockton.
N. K. Noyes, Duxbury.
D. B. Tuholski, Brockton.

SUFFOLK

E. P. Joslin, Boston, V. P.
G. M. Balboni, Boston.
J. W. Bartol, Boston, Ex-Pres.
J. L. Bremer, Boston.
M. E. Champion, Boston.
David Cheever, Boston, C.
A. L. Chute, Boston.
F. J. Cotton, Boston.
A. H. Crosbie, Boston.
W. P. Cross, South Boston.
R. L. DeNormandie, Boston.
Lincoln Davis, Boston.
G. B. Fenwick, Chelsea.
W. H. Ensworth, East Boston.
Channing Frothingham, Boston.
R. B. Greenough, Boston.
J. C. Hubbard, Boston.
Henry Jackson, Boston.
R. I. Lee, Boston.
G. A. Leland, Boston.
F. B. Lund, Boston.
Donald Macomber, Boston.

G. B. Magrath, Boston.
L. S. McKittick, C.
J. H. Means, Boston.
R. H. Miller, Boston.
T. J. O'Brien, Boston.
R. B. Osgood, Boston.
E. H. Place, Boston, M. N. C.
Alexander Quackenboss, Boston.
Anna G. Richardson, Boston.
W. B. Robbins, Boston.
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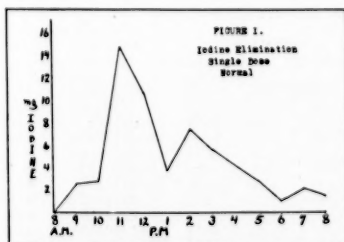
THE ELIMINATION OF THE IODINE IN THE URINE

In Normal Persons and in Exophthalmic Goiter

BY RICHARD B. CATTELL, M.D.*

At present, nearly all exophthalmic goiter patients are receiving iodine in some form as a preparation for operation. Relatively large quantities are given more or less empirically, yet it must be realized that but a small fraction of the drug can be stored in the thyroid gland. In previous reports¹, we pointed out that with iodine medication there is a constant increase of the iodine content of the gland, at times as great as 400%, as well as an anatomical regression toward a resting, more normal state. Coincident with the study of the clinical improvement² and alteration in the gland itself³, we have determined the elimination of iodine in the urine in forty nine of these patients under iodine therapy.

Iodine and its salts are readily absorbed from all the mucous membranes, especially well from the stomach and rectum; after single doses it is completely absorbed in 5 hours⁴. It is found in small amounts in the saliva, tears, sweat, milk, and other body fluids and effusions, but nearly all is eliminated in the urine and feces. Only a small amount is stored in the thyroid unless it is hyperplastic, yet this is the only tissue in which a relatively high concentration is normally found—0.2%. The elimination in the urine after single doses begins in 10 to 20 minutes and is maximum from 1½ to 3 hours. Normally 60 to 80% is excreted in the first 24 hours through this channel, with traces persisting for several days.



The curve in Figure I is representative of the elimination in the urine after a single dose of ten minims of Lugol's solution. This is an observation made in a normal goiter free adult on a regular diet except for forced fluids. The bladder was emptied every hour and iodine in each specimen determined. The peak we found was reached in 3 hours, followed by a pro-

gressive diminution, except for a temporary delay by the intake of food. The 12 hour night amount contained 5.4 mg. By analysis, ten minims of the solution used contained an average of 91.6 mg. The total elimination in the 24 hour period was approximately 70% of the total dose. Single doses of 1 gm. of potassium iodide have been used as a test of kidney function,—the amount excreted in the first 24 hours being often as low as 15-20% in nephritis. Wovschin⁵ found the elimination to be low in a number of chronic diseases.

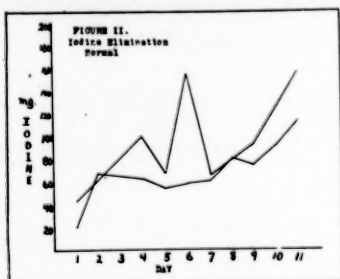
We have determined the iodine content of the urine of 6 normal persons and of 49 patients with exophthalmic goiter, all receiving thirty minims (m. xxx) of Lugol's solution daily. 24 hour specimens of urine were collected and the iodine determined over a period of several days. 5-10 cc. amounts of urine were used for analysis, which was done after the method of Kendall⁶. This yields both the iodine as iodide and the small fraction in organic combination. In analysing the actual amount of iodine in thirty minims and thirty drops of the solution given at the Deaconess Hospital, we found it to vary between 196.8 and 270.8 mg. The theoretical amount in thirty minims is approximately 250 mg. Since a large excess is given in exophthalmic goiter, either measure is accurate enough for clinical use, but minims should be used for quantitative work.

EXCRETION OF IODINE IN NORMAL PERSONS

Four patients, convalescent from general surgical operations unassociated with the absorptive and excretory functions, and one normal person were given thirty minims daily; an additional surgical patient was given sixty minims daily. No bad effects resulting from the drug were observed. The determination of the basal metabolic rate every two days in the normal adult showed no variation from normal, and there was no appreciable change in the daily pulse rate. The amount found in the urine varied considerably from day to day, with no constant level. More iodine was found with diuresis; while this apparent increase may be due to a multiplication error since but 5-10 cc. of urine were used for analysis, it seems more probable that it is an actual increase and that more iodine was eliminated with more fluid passing through the kidneys. Figure II presents the curves of elimination of 2 normal persons. In general, there is a tendency to increase the daily total output over an 11 day

*From the Lahey Clinic, Boston.

period on a constant dosage. The lower percentage elimination of the total iodine given with a constant dosage, in contrast to the elimina-



tion of single doses, suggests an increase in the former in the other channels of excretion, particularly in the feces. The average daily excretion in the urine of the 6 control persons is found in Table I.

TABLE I

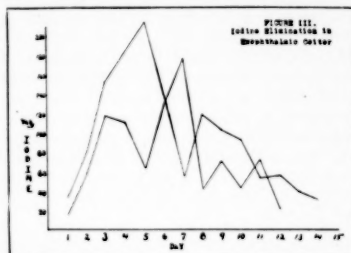
Subject	Sex	Age	Iodine in Urine mg.
C	M	24	74.4
P	F	18	153.0
T	M	27	88.7
B	M	12	71.4
H	M	24	164.3
M	M	49	285.6*

*Received sixty minims daily, all others thirty.

EXCRETION OF IODINE IN PATIENTS WITH EXOPTHALMIC GOITER

Analyses of the elimination in the urine of the 49 patients were made during different periods

of the iodine administration. Many were observed for a short period of time but 16 have been selected who had analyses for a sufficient period both before and after operation. In Table II are tabulated the time of beginning the iodine therapy, the operative date with the histology and iodine content of the gland at this time, as well as the daily iodine elimination in the urine. The average daily output in these patients seems to indicate a lower level of output, especially after operation, than in normal persons. Figure III shows the curves of elim-



ination of two such patients. There is a sharp rise for the first 3-6 days after beginning medication, after which there is a gradual fall and maintenance at a lower level. After operation, 8 patients showed a drop within 1-2 days, 3 no appreciable change, and 3 a slight rise in elimination (2 of this series had analyses after operation only). The form of the curves was similar in most instances, but their height varied individually; whether this is influenced by the histological or chemical condition of the gland and general condition of the patient was not deter-

TABLE II

IODINE ELIMINATION IN THE URINE IN EXOPHTHALMIC GOITER

Patient D. H. No.	Sex	Age	Operation Date	Extent*	Pathology		Date of Iodine Therapy started	Analysis started
					Histology	Chemistry†		
28362	F	48	1/7/25	H	Early Involution	2.919	1/1/25	1/1/25
28599	F	24	1/26/25	S	"	2.191	1/20/25	1/20/25
28432	F	45	1/16/25	S	"	1.169	1/8/25	1/10/25
28559	F	29	1/22/25	S	Advanced	4.220	1/15/25	1/15/25
23029	M	40	3/5/25	S ¹	Early	1.337	2/20/25	2/21/25
30552	F	48	6/29/25	S	Complete	—	6/20/25	6/23/25
30523	F	40	6/25/25	S	Early	—	6/19/25	6/20/25
30462	F	30	6/22/25	S	Moderate	—	6/14/25	6/17/25
30268	F	40	6/8/25	S	Marked	—	5/29/25	6/7/25
28721	F	38	2/5/25	S	Early	2.981	1/28/25	1/30/25
28732	F	22	2/6/25	S	Marked	2.854	1/29/25	1/30/25
30458	F	39	6/22/25	S	—	—	6/14/25	6/17/25
29724	F	50	6/16/25	H	Advanced	—	6/14/25	6/20/25
30440	F	24	6/20/25	—	Early	—	6/13/25	6/19/25
30512	F	35	6/29/25	H	Early	—	6/19/25	6/29/25
28469	F	58	1/28/25	H	Advanced	2.474	1/8/25	1/10/25

*H—Hemithyroidectomy, first stage.

S—Subtotal thyroidectomy.

S¹—Subtotal thyroidectomy, for persistent hyperthyroidism.

†Iodine in mg. per gram of dried gland.

mined. One patient was observed for a 31 day period and maintained a fairly low level during the extended time.

The normal thyroid gland contains about 2 mg. of iodine in each dried gram, or a total of about 15-20 mg. in the entire gland. In considering this figure, it seems improbable that 250 mg. of iodine as a daily dose in the form of thirty minims of Lugol's solution is necessary for a desired effect. Marine⁶ used very small amounts; Neisser⁷ and Loewy and Zondek⁸ used but 15 drops of a 5% solution of potassium iodide, making it greater or less according to individual conditions; this amount contains about 40 mg. of iodine. These observers found favorable effects with this concentration. The renewed interest—as evidenced in the recent literature—in the older conception of "Jod-Basedow" of T. Kocher⁹, makes a consideration of dosage pertinent. Plummer and Boothby¹⁰, Lahey¹¹, and Jackson¹² have all reported not infrequent instances of such a result in adenomatous goiter. DeQuervain¹³, A. Kocher¹⁴, and Hartsock¹⁵ have found a higher incidence of exophthalmic goiter since the use of iodine as a preventative measure in endemic goiter. The large dosage originally recommended by Plummer¹⁶ has given satisfactory results with but few unfavorable reactions; yet,—(a) in view of the older and recent reports of occasional bad effects, (b) a favorable effect with much smaller doses, and (c) the large quantities of the drug found almost immediately in the urine and thus not utilized,—there seems a sufficient recommendation for a smaller dosage. We have used ten drops of Lugol's solution daily for the short period between operations on the same patient

with satisfactory results, by the present criteria of judging the efficacy of iodine. In the few instances that the excretion was determined with ten minims daily, as much as 40 mg. was found in the urine. It is possible, however, that with the larger doses, more of the iodine may be taken in the gland temporarily with some benefit and then be quickly thrown into the blood stream to be excreted by the kidneys. No activity, however, of iodine has yet been demonstrated except that bound in the gland in organic combination as "thyroid iodine," a process requiring 8-30 hours.

With the present limited knowledge of this much studied iodine action in exophthalmic goiter, it seems necessary to give an excess of the drug.

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TABLE II (Continued)

MILLIGRAMS OF IODINE IN URINE—24-HOUR SPECIMENS

Day of Analysis												
1	2	3	4	5	6	7	8	9	10	11	12	13
67.1	120.0	72.2	85.3	100.3	—	131.4	152.5	231.7	125.7	137.8	169.3	—
16.2	59.4	116.5	111.1	63.2	129.5	177.0	42.4	60.4	44.4	62.7	21.3	—
67.5	—	—	—	—	58.7	—	101.9	82.7	104.0	167.3	73.1	67.7
35.2	80.7	152.0	182.5	215.4	140.2	56.4	119.2	102.8	93.4	53.1	57.8	40.4
42.4	90.4	114.2	—	—	—	114.6	—	114.2	—	119.1	77.4	32.5
33.1	38.4	50.1	98.2	100.7	133.3	83.8	42.1	61.3	—	51.2	46.9	77.4
41.7	46.7	49.3	76.2	20.9	78.0	65.6	101.6	64.3	50.5	24.8	45.2	12.2
72.8	—	141.8	81.5	97.4	143.9	43.4	35.2	36.3	48.5	45.5	119.0	30.7
133.8	87.8	120.2	138.9	81.3	106.6	48.9	64.3	41.4	36.7	—	—	—
59.0	34.2	66.9	—	71.4	62.1	88.9	44.4	93.1	73.1	60.7	—	25.9
62.2	26.3	40.0	—	37.0	49.7	82.4	51.9	52.4	122.6	71.2	—	46.4
23.0	35.0	64.1	42.8	45.2	27.8	37.0	60.9	49.7	33.0	96.9	81.5	32.2
45.7	61.5	92.7	96.2	61.8	150.0	114.3	39.6	155.8	—	—	159.3	—
92.0	197.7	52.6	66.3	139.2	92.4	45.0	97.8	—	—	—	—	—
30.0	94.5	78.8	70.7	58.6	87.6	118.2	57.4	—	—	—	—	—
129.0	124.6	159.7	114.9	—	128.7	68.1	97.5	—	—	—	52.8	—
Continued on successive days												
14	15	16	17	18	19	20	21	22	23	24	25	
105.3	—	—	81.4	76.2	—	—	66.9	129.2	77.4	—	—	
Continued												
26	27	28	29	30	31							
163.8	60.3	69.9	67.0	50.2	93.9							

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THE AGE OF CHOICE FOR OPERATIONS OF CHOICE IN
INFANCY AND CHILDHOOD*

BY THOMAS H. LANMAN, M.D., F.A.C.S.

A VERY large percent of the operations performed on the Surgical Service of The Children's Hospital may be called operations of choice. These may be of major or minor character. In practically all cases they are performed to relieve a condition due to some congenital defect. It has seemed worth while to give a brief paper showing the age at which operation for relief of these various conditions is best advised.

In general we are guided by the type of lesion that requires operation. If the lesion is in no way incompatible with the normal development of the child, operation is usually postponed until the end of the second year, or at least until the child has passed his second summer. This rule is followed more strictly in cases where the operation will be of a major character. We feel very strongly that the less surgery that is done during the first two years of life the better.

The post operative dangers incidental to a general anaesthetic, especially upper respiratory infections and gastro-intestinal upsets, are more formidable in the young child than in the adult. In this climate the possibility of post operative upper respiratory complications during the winter, and of gastro-intestinal upsets during the summer must not be disregarded. The infant or young child does not stand a relatively small amount of hemorrhage as well as the older patient. Also they will show signs of surgical shock sooner and from relatively less trauma than the older patient. Post operative acidosis is common, and a cause of considerable worry to the surgeon.

If the condition requiring operation is not compatible with the normal development of the child, earlier operation is needed. But we must always bear in mind that the presence of some condition that adds unduly to the surgical risk of operation is cause for postponing the operation even at the cost of not obtaining so satisfactory a result.

With these principles in mind I shall discuss some of the conditions we see on the Surgical Service, and point out the reasons for choosing the various ages at which we advise operation.

First some of the minor defects and abnormalities.

Birthmarks that can be treated by carbon dioxide snow, radium, or X-ray need not be discussed, as these forms of treatment do not require an anesthetic, and may usually be done at any age. Those that are about the mouth may require more conservative treatment. Danger of interference with nursing as result of

treatment, or infection of the lesion after treatment must be balanced against the existing interference with nursing.

In those birthmarks that require, or are suitable for, excision it is well to remember that in many cases there is bound to be more hemorrhage than in operations of a major character, and for this reason operation should be done only when the infant is in the best possible condition and preferably at least a year old. In cases requiring cauterization, the dangers of post operative infection must be carefully considered.

Small growths such as supernumerary digits, wens, and accessory auricles, do not interfere with the child's normal development and no treatment is necessary before two years of age. However, as the operation is a short and simple one, and not accompanied by any degree of hemorrhage, it is often justifiable, for the sake of the parents, to do them any time after six months.

Circumcision is in popular demand, but I feel so strongly that there is so rarely any surgical indication for circumcision during the diaper wearing age that I advise waiting until after this age is past.

HARE LIP AND CLEFT PALATE

In hare lip the urgency of early operation depends on the degree of defect associated in the upper maxillary bones. The common associated defect is not only a cleft of varying width in the maxilla on the affected side, but also a projection forward of the premaxilla or central portion. It is important that the premaxilla be brought back into line and in apposition with the rest of the upper maxilla fairly early in life. This alignment can be done comparatively easily in the first few weeks of life, as the bone is still soft, and therefore it is not necessary to cut or chisel the bone. Of course the less that is done to the upper maxilla the less is the danger of injury to the tooth buds. So if the child's physical condition warrants, operation for correction of hare lip is done by choice between the ages of 4-6 weeks. This also applies to cases of double hare lip, and in these cases there is practically always a serious defect in the maxilla, usually with a marked projection forward of the whole inter-maxillary bone. The early proper alignment of the maxilla is the basis of a successful cosmetic result on the lip itself, for the reason that proper alignment of the upper jaw not only gives a normal foundation for the overlying lip, but also allows the lip to be drawn together without undue tension.

In cases of hare lip uncomplicated by defect

*Read at the meeting of February 12, 1926.

in the maxilla the operation may be postponed for any length of time. On account of the unsightly deformity however, we usually operate within the first three months, but not earlier than four weeks.

Cases of cleft palate are best allowed to wait until between 18 months and 2 years. It is advisable to operate before the child has learned to talk because if the child is already talking, closure of the cleft in the roof of the mouth does not in itself entirely correct the speech defect. The child must be re-taught the use of the vocal muscles to overcome the nasal quality in the speech.

In cases of hare lip combined with cleft palate, when the lip has been repaired early, it is found that the bringing into apposition of the maxilla, has materially narrowed the cleft in the palate.

In both hare lip and cleft palate it is essential to remember that the child must be in good enough condition to warrant undergoing a long operation and one that may incur a moderate degree of hemorrhage. A steady gain in weight is one of the best guides, especially in infants. Absolute freedom from any naso-pharyngitis is essential. Any upper respiratory infection however slight, may cause a failure of the entire operation. And re-operation after failure is always more difficult and the result less satisfactory.

HYDROCELE

Hydrocele in infants is generally hydrcoele of the tunica vaginalis only; it seldom requires treatment. In case the tumor is very large tapping may be resorted to, although most cases at this age tend to get well without tapping. Cases of hydrocele that involve the spermatic cord, generally require operation. In these cases we generally wait until the child has passed his second summer. The cases that involve the cord as well as the tunica show a pear shaped irreducible cystic mass, the larger end in the scrotum and a narrow projection extending up along the cord in the groin. The real reason for operating on these cases is that there is almost invariably associated with them a small inguinal hernia.

HERNIA

This common defect can in almost all cases be satisfactorily held by a simple woolen yarn truss. The truss is easily applied, is soft and if properly put on will hold the hernia until the child is beyond the second summer. With intelligent coöperation on part of the mother even double inguinal hernia may be very satisfactorily and easily taken care of until the child is about two years of age when operation is advisable. If it is not possible to hold the hernia with a truss and symptoms of incarceration or strangulation develop the operation becomes one

of necessity and not of choice. These cases should be very rare, however. Hernia developing after two years should be operated on at any convenient time. We believe operation to be essential for cure, in all cases of inguinal hernia.

Inguinal hernia in girls is comparatively rare, but the same rule is followed as in boys, but remembering that in girls there is sometimes a prolapse of the ovary through the internal ring, and if the ovary cannot be replaced by taxis, a truss is inadvisable, as it may cause pressure on the ovary. In these cases operation becomes necessary and should be done as soon as the child's condition warrants the risk. Strangulation of the ovary in these cases is not common, but if it occurs it generally means sacrificing that ovary. Hydrocele of the canal of Nuck in girls, like hydrocele of the cord in boys requires operation as it is also usually associated with an inguinal hernia. Operation may best be postponed until two years.

Umbilical hernia can usually be cured by strapping. The larger ones can be held with strapping until after two years. It is only the very large ones however, that will not yield to continuous and properly applied strapping.

SPINA BIFIDA

We believe, as Dr. Cutler has pointed out in a recent paper, that about the only cases that are suitable for operation are the simple meningoceles. That is, cases that are not associated with any nerve paralysis. These generally have normal skin over the tumor mass and are generally relatively higher in the spine than the meningo-myeloceles. They also have usually a more pedicled base. In such cases operation may be done at any time in the first few weeks of life that the child's condition warrants.

Meningo-myelocele with any degree of paralysis is not benefited by removal of the tumor. The paralysis does not improve. These cases are usually the lower lumbar type, with paralysis of the perineal muscles, sphincters and legs. No case that has infection of the skin or leakage of cerebro-spinal fluid can be operated until these conditions have been cleared up. It is impossible to foretell or prevent the post operative development of hydrocephalus in any of these cases. The higher the location of the tumor the less likely is the nerve involvement, or the development of hydrocephalus.

EXTROPHY OF THE BLADDER

Extrophy of the bladder is fortunately rare. Our present feeling is that they are best treated by transplantation of the ureters into the sigmoid. Usually it is better to transplant one ureter at a time, and make the first operation between 9 months and a year. In the male this condition is usually associated with epispadias.

If the ureters are successfully transplanted, operation on the penis itself may be postponed for 4-5 years, as this operation is done largely for cosmetic reasons.

HYPOSPADIAS

Cases that have the abnormal meatus within 1 or 1½ centimeters of the glans can usually be corrected by the Beek type of operation. This operation involves dissecting the urethra free down to the penoscrotal angle and putting it through a stab wound in the glans and suturing it there. It is only in cases where the abnormal meatus is near enough the glans so that the dissected urethra can be pulled through the glans without tension, that the operation will be successful. Cases suitable for this type of operation are best done at about three or four years.

In those cases where the abnormal meatus is so far from the glans that the Beek operation cannot be done, and where a new penile urethra will have to be constructed, the operation is best postponed until there is further growth of the penis itself. I feel that we should wait until about 10 years in some cases, but it is hard to do so as it means generally that the child is kept out of school. The mental effect of not being able to urinate as the other boys do is a very large one, and in spite of my better judgment I think I have been operating too early on some of these cases. We certainly should wait till the boy is five years.

These cases often have a forward bowing of the penis due to contracting bands in the spongiosa. These contracting bands should be divided early to allow straight growth in the penis. And when present this must always be done as a preliminary step for later construction of a penile urethra. I think it should be done some time in the second six months of life.

WEB FINGERS

In these cases the best possible functional result is important. When more than two fingers are webbed, two or more operations are needed as it is unwise to try to free more than two fingers at a time. By waiting until 3-4 years of age, the greater size of the parts will give better chance of a good functional result, and yet not keep the child out of school. Operation for correction of webbed toes can be postponed until the child is far enough developed to insure a good result, namely about 3-5 years. Many cases need not be operated except for cosmetic and mental reasons.

UNDESCENDED TESTES

True nondescent of the testis is far less common than at first might appear. Very frequently infants are sent to the Out Patient Department for undescended testicles, that have a condition that simulates it, but is only an abnor-

mally movable testis, that is in the scrotum one day and high in the inguinal canal the next. A testis that has ever been seen in the scrotum, or can ever be brought down into the scrotum is not a true undescended testicle and unless hernia is present, operation is not needed.

The true undescended testis cannot be brought down into the scrotum and may indeed, be not even palpable in the inguinal canal. These cases show also an underdevelopment of the scrotum itself. The scrotum being merely a slight bulge of the skin, on the affected side.

Operation is best postponed until the boy is at least between 4-6 years of age. The proper maintenance of blood supply to the testis is of great importance in the future development of the testis, and as the technical difficulties of preserving the proper blood supply are far less at an older age we advise waiting until at least between 4-6 years of age. The associated hernia is of course repaired also at this time.

Mal descent of the testis or ectopic testis also occurs, the testis being in the abdominal wall, on the anterior rectus sheath just above external inguinal ring;—in the region of Scarpa's triangle;—or in the perineum. In these cases we also wait until the boy is 4-6 years of age.

I shall not consider the extensive defects and abnormalities such as the absence of extremities in part or in whole. These are very rare and each case must be considered separately.

CONCLUSION

While I do not wish to give the impression that surgical procedures that have a clear indication should be postponed on account of the early age of the patient, still I firmly believe that there should be a very clear indication for any surgery done during the first two years of a child's life. The incidental dangers of surgery at this time are relatively great. These dangers should be carefully weighed against the actual necessity for the surgical procedure. Some of the operative procedures now done during the first two years of life have little or no surgical necessity. Certainly in infants and young children unnecessary surgery is bad surgery.

DISCUSSION

DR. CHENEY: Most of the operations on the eyes that have to be done on infants and children are distinctly operations of choice. There are three main things that have to be considered. First—is obstruction which is commonly seen in newborn infants. The tear ducts are not working properly. The best thing to do in a case of this kind is to clean with a weak solution of zinc sulphate. If there is any collection of pus in the sac or tear duct keep it well washed away in the cornea from the edge of the orbit. A good many of these cases if treated in this

way clear up of their own accord. Very rarely do you get an infection or an abscess of the sac. It is so rare that you do not need to consider it. If the condition keeps up after a year, I think at that time it is wise to give the child a little ether and pass a probe down through the sac into the nose. The danger of passing a probe in a child within a year is that the passages are so very small that you have to guard against injuring the delicate mucous membranes. In this type of case it is better to let them go for a year keeping the eye clean with zinc sulphate solution.

The second condition is congenital cataract. These cataracts are not like those seen in adults in that they do not have complete destruction of vision. Usually the cataracts seen in infants are very small and the child can get quite a good deal of vision by seeing around them so that the condition does not, as a rule, prevent the child's mental development going on normally during the first year. After the first twelve months, I think it is time to consider doing something about the cataracts. The cataract in the child is treated differently from that in adults in that you do not try to give ether. There is a certain amount of risk in giving a child ether. There is no reason why you should not use atropin. I think it is better to defer the operation till the child is at least one year of age, and it is even better to wait until the child is three years of age.

The third condition to be considered is squint which is fairly common in newborn infants. It is possible to fit glasses to a six weeks old baby. The youngest infant I have seen wearing glasses was an eighteen months old baby. The baby seemed quite placid with the glasses. They could not be taken from him. It is pretty rare to get a child as young as that to wear glasses with benefit. As a rule, you get more success in waiting till the child is three years of age. It might be well to wear glasses to correct a refractive error and then if there is no benefit and the eye still stays crossed, I think operation should be considered. Each case should be treated according to its specific indication. I would advise doing nothing radical until the child is at least eighteen months old and then I should advise the doctor to use his own judgment from that time on.

DR. BROUGHTON: I was particularly glad to have Dr. Lanman bring out the fact that many testicles are not undescended testicles and that they are carried the greater portion of the time, especially in fat youngsters, in the inguinal canal.

I have seen children diagnosed as having endocrine disturbance because they are overweight and fed pituitary gland extract without having had a very careful metabolism done. On further investigation the testicles which were said

to be undescended I have been able to feel easily in the scrotum.

DR. STONE: I wish that I could disagree with what Dr. Lanman has said, but I cannot find anything in which to disagree.

I was glad to hear what he had to say about circumcision. The common idea that circumcision is going to cure a number of diseases is a great mistake to my way of thinking.

Dr. Lanman says that he does cleft palate operations between eighteen to twenty-four months of age. Personally, I think I would operate on some of the youngsters a little younger than that; about fifteen to eighteen months of age.

The operation for undescended testes Dr. Lanman places at six years of age. I think that if they are having symptoms that is all right. In these cases it is just as well to wait a little, but it should always be done before puberty. If there are symptoms and the boy is pretty uncomfortable, it is better to operate at that time. But where there are no symptoms, I should operate sometime between eight and ten years of age.

DR. CUTLER: I was interested to hear what Dr. Lanman had to say about operations for spina bifida. If I understood Dr. Lanman correctly on this point, only meningoceles are the ones which will be markedly benefited by operation, and I think he said one should be careful not to interfere with the sac before operation. There are a certain number of these unfortunate babies that come to the hospital with leaking sacs. I have not withheld operation on these cases, because I have felt it was better to go ahead with it.

DR. THORNDIKE: I should like to add a statement to what Dr. Lanman has already said, namely, that in advising a truss it should be made of yarn and that it should be white and not colored.

DR. LANMAN (In closing): In regard to what Dr. Stone said about cleft palate operation, I think he is probably right in cases where the cleft extends only to the hard palate. That is a very much simpler operation than the complete cleft palate, and it can be done earlier, I, perhaps, stick to eighteen months, because the last I did was on a baby twelve months of age that should have come out perfectly well, but did not come out as well as I should have liked.

ORIGINAL ARTICLES

CHOLOGIC PROPERTIES OF MAGNESIUM SULPHATE*

BY WALTER L. MENDENHALL, M.D., C. W. MCCLURE, M.D., AND MILDRED CATE, S.B.

THE refusal of Henry Wickes's oxen to drink the salty bitter water flowing from a spring in the town of Epsom, County Surrey, England, may be taken as the dawn of the use of Magnesium Sulphate in medicine. The story of its medical use now dating almost three centuries is admirably told in a recent article by Soper¹. About two decades ago Meltzer's investigation² stimulated anew the interest in this drug, whose chief use had narrowed down to catharsis. Most all cathartics have been suspected of influencing biliary secretion and Magnesium Sulphate has not been omitted from the long list of suspected chologogues. Within the past few years renewed interest in the effect of Magnesium Sulphate on biliary function of the liver has been stimulated by the observations of Lyon³ on patients with disease of the biliary tract. Recently some researches completed in the gastroenterological division of the Evans Memorial Hospital have indicated that in man Magnesium Sulphate directly stimulated the production of bile by the liver cells⁴. These observations, made on man, could not be so controlled as to prove conclusively the occurrence of such stimulation. In reviewing the literature it is remarkable to find so little is known of the pharmacology of a drug so widely used in medical practice. Most of the experimental evidence by various observers have shown a decreased bile secretion under Magnesium Sulphate. The clinical observations possessed so much pharmacological interest that it was decided to attack the problem with the purpose of determining experimentally the exact role played by Magnesium Sulphate in producing a flow of bile. Obviously animal experimentation offered the only means for conducting the necessary type of investigation. For this reason animals were used for the observations which are reported in this communication.

Method: A series of twenty-five experiments were performed in which 13 dogs and 12 cats were used. The dogs were anesthetized with chlorotone, given intraperitoneally; the cats were given urethane by stomach. The animals were starved for 18 to 24 hours previous to the experiment. The experimental procedure was as follows: ether was given in the beginning of the operation to supplement the urethane or chlorotone if more anesthesia was necessary. Usually when it was given at all it was withdrawn in 10 or 15 minutes. A tracheal cannula was inserted, carotid artery prepared for blood-pressure tracing, femoral vein prepared for intravenous injections, abdomen opened, cystic

duct tied, cannula placed in common bile duct, end of duct still connected with intestine was tied so that no intestinal contents could be regurgitated into abdominal cavity; a loop of intestine was pulled out and a cannula placed in a mesenteric vein. The bile duct cannula was then connected by means of a rubber tube to a glass tube mounted on a horizontal support. The glass tube carried a scale indicating calibration in one tenth cubic centimeters. By means of a hypodermic needle thrust through the wall of the rubber tube, water was injected into the bile cannula, and the meniscus brought to the zero point on the calibrated scale. The tube was about 80 centimeters long, and by means of a short rubber tube was connected to a second similarly calibrated glass tube, mounted parallel on the same support. The second tube was used in case the first tube became filled before the end of the experiment, thus, as soon as the meniscus reached the last calibration mark on the first tube, fluid was introduced into the tube through a hypodermic needle, as described above, so that the bile meniscus was then forced around into the second tube up to the beginning of the calibration scale. The tubes were adjusted on a level with the bile duct and thus removed the factor of hydrostatic effect. It was seldom necessary to use more than two tubes. This method of recording bile flow was chosen because it seemed to overcome certain objections to the usual method of drop recording. Since bile formation is ordinarily slow a drop may take fifteen minutes or more to form, and, thus, water content may change on exposure to room conditions. Observations of volume under such conditions are unreliable. In the practically closed tube system employed in this investigation, changes in volume of bile are accurately recorded at any moment. Furthermore, errors and delays due to mechanical devices used for drop recording are obviated. Obviously no loss of fluid occurred after the cannula and calibrated tube were connected, and since the cystic duct was tied the increase in volume of fluid must be due to increased bile production. It was recognized that changes in liver volume might affect changes in the level of the meniscus, but in the absence of changes in general blood-pressure level it was regarded as a negligible factor if it was a factor at all. Furthermore, the changes in volume of bile that did occur were in no way related to the changes that one may expect in an organ as large as the liver. The cannula in the mesenteric vein was connected, by means of a short rubber tube, to a tube calibrated in hundredths of cubic centimeters. The cannula and calibrated tube were then filled with the warmed Magnesium Sul-

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phate solution, which was injected under gravity by releasing a clamp on the mesenteric vein. Injections were made either by way of the mesenteric or the femoral vein, usually by way of the mesenteric vein. The mesenteric vein was chosen because the Magnesium Sulphate solution would enter the blood stream in conditions more nearly comparable to absorption when the drug is given by mouth or duodenum, i. e., absorption from intestine and direct transference to the liver. The possibility of the drug being carried to the veins by way of the thoracic duct was considered, but it was felt that introduction of the drug by way of a femoral vein would be essentially a comparable condition. The mesenteric vein with an accompanying small loop of intestine was left outside the abdomen, the latter being closed to prevent drying or loss of temperature. The gall bladder and contents were left undisturbed and all operative procedures were accomplished rapidly and with especial care in avoiding tissue injury. After operative procedures were completed the experiments were carried on for periods varying from 4 to 8 hours. Ordinarily 1 to 2 hours were used to establish so called "normal" rate of flow before any injections were made. Seventeen experiments were successfully performed, 8 discarded because of faulty technique or death of the animal; almost all the discarded ones occurred in the development of the technique. In most of the experiments the Magnesium Sulphate was used intravenously; in some it was injected directly into the duodenum by means of a hypodermic syringe, the needle being thrust through an exposed loop.

The solution of Magnesium Sulphate for intravenous injection was made as follows: the Magnesium Sulphate ($\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$) was dissolved in distilled water so that 1 mgm. of the drug per kg. of animal was in each 0.25 cc. of solution thus if an animal weighed 10.8 kg. the solution was made so that 10.8 mgms. of Magnesium Sulphate were contained in each 0.25 cc. This made it possible to give the dose with the least possible amount of fluid and also in salt strength more nearly isosmotic with the blood. In instances where weight and dosage would result in a solution distinctly hypertonic, then the solution was adjusted so as to obviate such a factor. When the injection was made into the lumen of the intestine varying strengths of concentration were used ranging from 4 to 33%.

Results: The general results of the study may be stated briefly as follows: Magnesium Sulphate is a chologogue when introduced into the circulation in small doses extending over a long period of time, one to two hours or more. It is a depressant to bile secretion when introduced into the circulation in large doses, unless there has been a previous medication with Magnesium Sulphate in small doses. If an animal receives a single large dose of Magnesium Sul-

phate intravenously it results in a prompt diminution in bile secretion, but if, however, for a period of an hour or more, small doses are given and with gradual increase in size, a large dose may then be given without depression of bile secretion or in some instances accompanied by an increase in bile flow. When the drug was introduced into the intestine our experiments showed a chologogic effect, and this effect was greater and more certain if the strength of the solution was from 4 to 6% than it did if the strength was 33%. In fact some of the animals (cats) died promptly under the influence of such a high concentration.

In the beginning experiments, we used doses comparable in size to those used by other observers and found an immediate diminution in bile flow. Thus, in the beginning experiment we began with a dose of 0.060 gm. per kg. and increased up to slightly over 0.300 gm. The bile flow almost ceased. We repeated the experiment with still larger doses, beginning with doses comparable to those used by Fraser. We can confirm his results with that size of dose. There was a marked reduction in bile flow. In reflecting upon results obtained clinically it was recognized that Magnesium Sulphate because of its relatively slow absorption and because of its relative non-absorbability never gains access to the circulation in amounts anywhere near comparable to these large doses administered intravenously. We, therefore, decided upon a dose with a size and spacing which would be comparable to the state obtained clinically when the drug is introduced into the duodenum. There, in addition to its possible reflex effects, it may be absorbed, but the absorption must of necessity be small in amount because of the nature of the salt. It was found that if the single dose was reduced to 1 mgm. per kg. of animal weight and introduced at the rate of 10 mgms. per kg. per hour that after one or two hours the amount could be steadily increased and along with the increase in dosage an increase in bile flow. If, now, we introduced a dose intravenously such as we used in the preliminary experiments, we could obtain a further increase in bile flow. If the dose was tremendously increased then bile flow would begin to show a diminution although still above the established normal. We have no explanation to offer for this curious result of the repeated doses, although such a phenomenon is not unheard of. It may be of value to know that the body when loaded up gradually with Magnesium Sulphate is capable of withstanding a much larger dose than is ordinarily tolerated, especially when there is indication for prolonged Magnesium Sulphate medication.

An interesting feature of the results obtained was that within certain limits the increase in flow showed roughly a definite relation to the normal flow. The most striking chologogic ef-

fects were shown where there was either a slow flow or a flow diminishing steadily from a previous flow that was normal or above normal. Then the flow may be increased greatly from the low point. An example of this is shown in Fig. 1. This experiment was one in which the

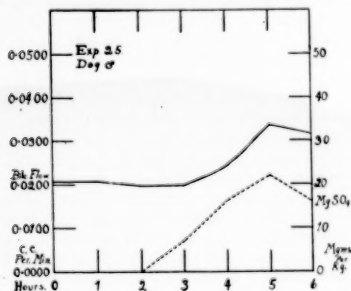


Fig. 1. Rate of bile flow as influenced by gradual introduction of Magnesium Sulphate into the mesenteric vein.

bile flow had been steadily diminishing for a period of two hours when Magnesium Sulphate administration was begun. The uninterrupted line shows the rate of bile flow in hundredths of cubic centimeters per minute. The interrupted line represents increasing concentration of Magnesium Sulphate injected in the blood beginning with 0 at the end of the 2nd hour. The numbers at the right of the chart refer to this concentration in terms of mgms. of salt to kg. of weight of animal. In this experiment the bile flow might be considered normal in the beginning of the experiment, but showed a definite downward trend for a period of two hours. The gradual introduction of the Magnesium Sulphate not only stopped this declining flow but reversed the condition into a flow considerably above the normal. By our method of recording bile flow a clear cut demonstration of the effect of Magnesium Sulphate is shown. Had the ordinary drop method been employed it would be easy to conceive of the effect as being negative or possibly even a diminished flow since at best we were dealing with small volumes of fluid and the factor of evaporation might easily conceal or render negative the real action of the drug. If, however, an animal showed a high rate of bile flow, then the results were not so striking. Thus in five experiments with cats, selected because of comparable conditions of the experimentation, the normal rate of bile flow was 0.0112 cc. per minute. Of this series one cat showed a slow rate, 0.0031 cc. per minute with progressive diminution of flow. Under Magnesium Sulphate the rate increased 329%. In another cat whose rate was about normal (0.0110 cc. per minute) with only slight progressive diminution, the increase was only 9%. In 7 dogs chosen because of comparable conditions of experimentation, the nor-

mal rate of flow was found to be 0.0183 cc. per minute. In one animal showing a slow flow, 0.0106 cc. per minute, Magnesium Sulphate increased the flow 147%, in another experiment the bile flow was 0.0200 cc. per minute, the flow was increased 33 1/3%. Of the 5 cats noted above, in which the dose was 10 mgm. per kg. per hour, all showed increased secretion of bile except one in which there was a slight decrease. Of the 7 dogs noted above, all showed an increase in bile flow except one in which there was no apparent change in flow. The fact that normal secretions are not as profoundly affected as are those in which there is considerable departure from the normal is in harmony with the well known principle that pharmacological agents ordinarily show most striking results where functions have departed from the normal. Clinical evidence shows the most striking results from the use of Magnesium Sulphate where there is a marked departure from the normal. In these experiments introduction of the drug into the duodenum was followed usually by increase in the bile flow if the strength of solution was relatively low, 4 to 6%. In some instances no noticeable increase was observed. It is not probable that conditions are always favorable for absorption to take place, which may account for lack of effect. Our main efforts were made to determine if Magnesium Sulphate after absorption was capable of stimulating bile secretion. No marked difference was noted in the effect of Magnesium Sulphate given by way of the mesenteric vein and by way of the femoral vein except that the beginning dosage must be kept smaller in the mesenteric than in the femoral. Apparently the dilution, which occurs by introduction into the femoral vein, makes it possible to use slightly larger doses, although we usually adopted the same rate of inflow whether using femoral or mesenteric vein.

Control animals in which either no injections were made or in which injections of doses of Sodium Chloride comparable to those of Magnesium Sulphate were used, showed a regular and constant rate of bile flow throughout a period of four to six hours.

Discussion: Clinically and experimentally, several explanations have been offered to interpret the action of Magnesium Sulphate. First, it increases bile flow because of osmotic effects⁶ exerted in the upper duodenum and surrounding tissue, thereby relieving swelling and congestion and thus affording ready egress of bile from the common duct. Second, it increases bile flow because of an effect upon the sphincter of the common duct, relaxing it and providing for a facilitation in bile expulsion; or by reflex effects upon the gall-bladder causing contractions which expel the bile.⁷ Third, it stimulates liver cells to greater production of bile.⁴ Fourth, it increases bile flow by a combination of the first three mechanisms.

Obviously, in the first two explanations, bile production per se is not affected but are instances of increased mechanical facility for bile delivery to the intestine. Mechanical obstruction to bile flow is a very common disturbance encountered clinically, and if it is not extensive may be overcome by just such a change in mechanics as Magnesium Sulphate may bring about on the basis of each or both of the first two explanations. However, the experimental work on which either of the first two theories mentioned is based is inadequate to prove their correctness.

A bile flow that is deficient qualitatively, quantitatively, or both, may present the possibility of abnormal liver function, in which case the object of treatment may not be met by Magnesium Sulphate if its only actions are those resulting in changed mechanical conditions. Qualitative changes in the bile have been demonstrated in patients whose livers were presumably functionally deranged in observations made in the Evans Memorial⁴. The clinical observations seem sufficiently numerous to warrant the conclusion that Magnesium Sulphate has a direct stimulating effect upon bile secretion, but its experimental demonstration has hitherto failed to verify the clinical observations and some are inclined to believe that the results observed clinically may have been fortuitous. Most of the animal experimenters in reporting their results say that Magnesium Sulphate does not affect bile secretion, or if it does, affects it in the way of depression⁵, rather than stimulation.

The results obtained in this investigation confirm many of the clinical observations. While it was generally noted that small doses of Magnesium Sulphate increase bile flow, it was also noted that large doses decrease the flow. Clinically, a decreased flow has been noted which, in the light of this investigation, may be explained by a too rapid absorption and a consequent depression of bile flow. It is conceivable that this may occur when the concentration employed is too high for the particular mucous membrane involved. Thus a 33% solution is a relatively high concentration and as such the salt action which results may so injure the mucous membrane that it behaves like a passive membrane and permits a more rapid penetration of the salt and a consequent sudden appearance of relatively large amounts in the circulation. Then it depresses bile secretion just as effectively as it does when *injected intravenously* in large amounts. A practical illustration of this was noted during this investigation. A patient was under treatment by Magnesium Sulphate, 33% solution by duodenum with no increase in bile flow. Upon using a more dilute solution there resulted copious outflow of bile. From the results of this investigation it would seem that such high concentrations as 33% are not neces-

sary, in fact may sometimes be harmful.

The evidence herein reported shows that biliary flow occurs when proper amounts of Magnesium Sulphate reach the liver by way of the blood stream, directly after absorption from the gut. Comparable results are obtained whether the gall bladder is in situ or has been excised. These results show conclusively that Magnesium Sulphate stimulates the actual production of bile by the liver cells, i. e., has a true chologogic action. They also show that the quantity of bile which can reach the intestine is not necessarily influenced by the presence or absence of the gall bladder. The results of these observations on animals support the contention of McClure and his co-workers that in man, bile found in duodenal contents has come from the most part directly from the liver and has been modified slightly, if at all, by any action of the gall bladder⁴. That Magnesium Sulphate is absorbed from the intestine is indicated in the cases where death occurred following introduction of a large dose into the intestine. These large doses may also cause depression of bile flow as is plainly indicated in the results of Fraser.

The results of this investigation substantiate many of the clinical observations and seem to warrant the following conclusions:

1. Introduction of Magnesium Sulphate into the portal circulation as described herein increases the bile flow in the absence of the gall bladder, and therefore its obvious result is a stimulation of bile production by the liver cells.
2. Large doses of Magnesium Sulphate intravenously (i. e., amounts greater than is possible of entering the circulation under ordinary condition of absorption) cause a retardation of biliary secretion.
3. Large doses of Magnesium Sulphate by duodenum may cause depression of bile flow, which in the light of our evidence is due to rapid absorption of Magnesium Sulphate.
4. When Magnesium Sulphate is introduced directly into the intestine it has a chologogic effect exclusive of any that may conceivably be exerted through local or reflex mechanisms.
5. The chologogic action of Magnesium Sulphate is more marked in instances where bile flow is diminishing or is small in amount.
6. The evidence supports the usual conception that Magnesium Sulphate is absorbed from the intestine.

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THE TRUDEAU SOCIETY

THE ninth meeting of the Trudeau Society of Boston was held in Sprague Hall, the Medical Library, 8 The Fenway, on May 11, 1926.

The meeting was called to order at 8.20 P. M. by Dr. Cleaveland Floyd, the roll called, and the records read, which were accepted as read.

The speaker of the evening was Dr. Edward O. Otis, his subject being "The Symptomatic Treatment of Tuberculosis." Dr. Otis' paper is herewith reproduced.

GENERAL TREATMENT

Besides the usual hygienic-dietetic treatment, rest, fresh air, and food, is any general medication of value or desirable—"medicinal tonics," as Pottinger calls them? Of course, as we know, there is no drug that has any directly curative effect on the disease, but are there any which may improve the general condition, at least in individual cases—such, for example, as the hypophosphites, the calcium preparations, cod liver oil, malt, arsenic, creosote, and others? Moreover, when one considers the psychic element, one's experience is that a patient often feels more contented and hopeful if he is taking something, if only "causa mentis." I fancy that we all, when we are ill, if we were to confess it, feel a little more secure and hopeful if we are taking some drug with the assurance of our physician that it will do us good. Human nature in this respect is quite the same with the ignorant as with the learned. It may seem heretical to suggest the idea of general medication, but it may be worth while to give the subject a moment's consideration although it is true that such attempts in the past have been sorry examples of fantastic medication which would be humorous if not so pathetic.

Again, are small amounts of alcohol in any form of value? The English and Continental physicians apparently think they are, and so sagacious and wide-experienced physician as Dr. Austin Flint has said that his studies furnished striking example of the value of alcohol.

CLIMATE

Of late years one does not hear much about a change of climate for tuberculous patients. Formerly, however, as we know, a change to a climate which was considered more favorable than the one the patient was in, was one of the first things thought of, and in particular Colorado was the place of choice for this purpose.

There is still, I believe, advantage to be gained in certain cases in the removal to another location where the climate is considered more favorable with regard to pure air, sunshine, and dryness, provided the patient can be under the care of a competent physician and preferably in a

sanatorium. I am convinced that some of our patients under treatment either in their homes or in a sanatorium in the East would do better in such a climate as Colorado Springs, and in such a sanatorium as Cragmor with its excellent medical attention. The southwestern resorts also offer excellencies of climate and good medical service.

A change per se is not infrequently an advantage, in addition to the more favorable climate.

REST

Although this fundamental principle in the general treatment of tuberculosis is outside the scope of this paper, yet I cannot refrain from saying a word with regard to it, for in my experience not even yet is the paramount importance of rest fully appreciated by many physicians. Dr. Pratt many years ago demonstrated what could be accomplished by rest in the treatment of tuberculosis, and his striking results emphasized, as has never been done before, its value.

In the first place, when rest is indicated it must be absolute rest, not "placing one foot over the other," as Patterson says; and this rest must be prolonged, not only until all toxemia has subsided, but until the extension of the local lesion is arrested and the formation of scar tissue becomes predominant.

We can do something to supplement simple bed rest by the procedure first suggested by Webb, of lying on the affected side. The chest jacket, several of which are now to be had, I believe is also of value by constricting the respiratory movement, just as we strap a side for pleurisy. I have often thought that if we could put the old chronic quiescent cases to bed and keep them at absolute rest for an indefinite period, a real arrest of the disease might be obtained. Of course, the only complete rest of the diseased lung is its compression, either by artificial pneumothorax or by thorocoplasty, and the world-wide experience with these two operations is convincing and they deserve more serious consideration than we in this part of the country seem to have given them. To one who has witnessed the operation of thorocoplasty it seems almost brutal, but it is surprising that there is so little shock, and there is already at hand quite abundant evidence of its value in saving many lives.

HAEMOPTYSIS

In the first place it is well to make sure of the source of the bleeding. There are other sources of haemoptysis besides the lungs. Cirrhosis of the liver causing disturbed circulation, varices of the oesophagus, mitral lesions, aneurysm,

bronchiectasis, bronchitis, and sometimes a nose bleed may mislead us.

Streaked sputum, though generally disregarded as unimportant, may or may not mean anything, but at all events it alarms the individual who has it. There are, as we all know, frank cases of haemoptysis, the cause of which is undiscoverable by any means of investigation within our power. We say, and it is not improbable, that it is from some tiny tuberculous focus in the lungs which we are unable to detect. Haemoptysis, however, from a known lesion in the lungs, occurs, as we know, in about fifty per cent of cases of tuberculosis and in differing degrees, according to the extent and activity of the lung lesion.

One can roughly divide haemoptysis into three classes; first, that which occurs in early or moderately advanced cases; second, that which occurs in advanced cases with cavity; and third, that which occurs in fibroid cases in later life. Rarely, if ever, does an immediately fatal case of haemoptysis occur in the first category, and rarely does a non-fatal case occur in the second.

As to the treatment of haemoptysis in the first class, namely the incipient or moderately advanced cases, the most of them would take care of themselves without any direct treatment except rest. Indeed one occasionally hears of an individual who has a smart haemoptysis while about his work, and who unconcernedly keeps on, paying little heed to the hemorrhage, which subsides with no immediate further results. In most cases, however, the presence of blood in the mouth is an alarming symptom, both to the patient and his entourage and some active treatment is demanded.

Rest with fresh air are the first requisites. I cannot see that the position of the patient is of any great importance, although I prefer the semi-recumbent one. The ice-bag is the usual external application, but I doubt if it is of any value except as a visible evidence of doing something. Many drugs have been employed, and the hemorrhage has subsided, and the result is attributed to whatever drug has been used, a post hoc, propter hoc deduction.

Everyone treating this symptom, however, has his own plan of procedure. Mine is the use of the nitrites such as the nitrite of amyl, nitrite of sodium or nitroglycerine; a saline laxative or cathartic, and a small amount of codeia given every two to four hours, just enough to calm the nervous excitement and control the cough. It is a widespread custom, I know, to give a hypodermic of morphia, generally a quarter of a grain, but in my experience this is rarely necessary and it may be a cause of harm in producing aspiration pneumonia. I am convinced that the milder derivatives of opium, if any are indicated, are preferable. Of the various serums and haemostatic prepara-

tions, I have had little experience, but I doubt if they are needed or are of much value.

In the second category, in the advanced cases with cavity, the haemoptysis is either overwhelming and immediately fatal or recurrent at frequent intervals and in large amounts, and in this case the result is equally disastrous. In this class of cases artificial pneumothorax is indicated and if it can be done, would seem to be the only effective means of allaying the hemorrhage. Unfortunately, however, one is not likely to have at hand either a skilled operator or an apparatus for immediate use. Of course the other procedures mentioned above, or any others available, such as the old-time remedy of salt or ligation of the extremities, large doses of atropin and the calcium preparations have also been endorsed.

In the haemoptysis occurring in fibroid cases, there really seems no indication of any very active treatment, for in my experience hemorrhage in these cases does not seem to have the slightest injurious effect upon the patient or the local condition.

When all is said and done, one must agree with Fishburg, that "we do not know of any drug which will stop hemorrhage." It is remarkable what severe and recurring haemoptyses one may have and be none the worse for it, so far as the local lesion is concerned.

COUGH

In order to cough one must inhale more or less deeply to obtain the "vis a tergo" for the expiratory cough; hence coughing implies sudden and unusual movement of the lungs. Coughing is really a breathing exercise, and there can be no approximation to local rest where there is much coughing, however quiet we keep the body.

Where there is much secretion one must cough to eliminate it. There is also the unproductive and irritable cough, sometimes more incessant and annoying than the productive cough. Again the cough may be aggravated by a recumbent position and in consequence one's sleep is disturbed or inhibited.

Furthermore, a constant cough discourages the patient and he is often insistent that something should be done to relieve him. Coughing not infrequently also causes emesis, the "emetic cough," so-called, another unfortunate result of this symptom.

In each individual case a careful study must be made of the character of the cough, whether productive, or non-productive or irritative, although both kinds of cough are really caused by the same factor, namely some secretion somewhere in the respiratory tract. From the result of such careful investigation the treatment must be determined. If the cough is only of a moderate degree no drug is indicated other than the open air regime except perhaps some simple

remedy, more for its psychic effect than anything else. When the cough is of the productive kind the main object to be attained is to increase the intervals between the paroxysms of coughing; and when of the non-productive kind, to allay the sensitiveness of the irritated and irritable mucous membrane of the respiratory tract.

In the first place, the various simple remedies so well known can be tried, such as chloroform water or tablets, lactucarium, and the various sedative syrups. Inhalations or sprays are serviceable if the upper respiratory tract is irritable. Failing with these simple remedies, and with a considerable number of patients they will fail, some form of opium will have to be employed; as Flint wisely says, "Palliatives containing opium are allowable or advisable although an evil, because they are the means of relieving a greater evil," and as Osler in his last illness, when distressed with his cough wrote, "All bronchial therapy is futile; there is nothing my good doctors have not made me try, but the only thing of any service in checking this cough have been opiates, a good drink out of the paregoric bottle, or a hypodermic of morphine."

The milder derivatives of opium are preferable, such as dionin or codeia; I prefer the latter. As little as possible should be given as will accomplish the purpose, and should not be continued in a routine way. A single dose of codeia at night may be sufficient. In the advanced and hopeless cases, obviously opium may be used more freely employed where the cough is painful and frequent.

In the so-called "emetic cough" mentioned above something must be done if the patient's nutrition is to be maintained. The meal which is most frequently lost is breakfast. A warm drink of some kind on awakening will often excite coughing and the elimination of the accumulated secretions, and subsequently the breakfast can be taken with less likelihood of losing it. Reclining immediately after eating and several small meals a day instead of the three more heavy ones are rather expedients, and of medicaments a few drops of chloroform well diluted, menthol, or cocaine before meals have in some cases given favorable results.

As a last resort codeia taken an hour before meals may relieve the situation.

DIGESTIVE DISTURBANCES

Digestive disturbances of one kind or another, and anorexia may prove a fatal obstacle to recovery. It is therefore of fundamental importance that sufficient food should be taken and assimilated. Generally, as Labourin says, "Every-day food is sufficient in the treatment of three quarters of all tuberculosis patients." Nevertheless, the physician must satisfy himself that the "every-day food" is sufficient and of the proper constituents.

In the remaining one-fourth of the cases at least, digestive disturbances are present in various forms, and require special dietetic, and often some drug, treatment.

It is hardly necessary to consider in detail the management of the various gastro-intestinal disturbances, such as flatulence, distress after eating, nausea, vomiting, simple diarrhea, or constipation. These must be combated by diet and appropriate medication, as in such conditions unaccompanied by tuberculosis.

One of the most difficult conditions to deal with is anorexia, as it is one of the most vital. The old saying, that the tuberculosis patient who does not eat is doomed, is true. It will tax all the ingenuity of the physician, dietician, and nurse to induce an anorexic patient to take sufficient nourishment, and demands a very careful study of food values, their method of preparation, and the frequency of giving them. No pains or effort is too great in securing sufficient intake of food and satisfactory digestion and assimilation. Neither open air, rest, or change of climate will avail if this fails.

In the presence of gastro-intestinal disturbance, one must always bear in mind the possibility of intestinal tuberculosis, and if this condition is suspected, the X-ray and other diagnostic means should be employed to prove or disprove it. If found to exist the Alpine or Quartz crystal lamp seem to be the accepted treatment.

NIGHT SWEATS

This symptom has never seemed to me as serious or important as it is often considered to be, or as frequent. Patients often say that they have night sweats when on further inquiry they are not really such. If true night sweats are present careful arrangements for open air sleeping without too much covering may be effective without other treatment.

If more active treatment is required some nourishment, such as a glass of warm milk just before retiring, and repeating it later, just before the time when the sweating has been found to occur, and bathing the patient with acidulated water on retiring, may avail. Of drugs I have found two which in my hands have been the most useful, agaricin and camphoric acid, or the combination of the latter with pyramidon.

After all, night sweats are but a symptom of the general toxæmia of the disease, and whatever conduces to diminish that will also diminish or obviate this symptom.

PLEURISY

Pleurisy with effusion is not an infrequent occurrence in the course of pulmonary tuberculosis and when the effusion is moderate, it is probably best let alone, and may serve a useful purpose by compressing the lung. If excessive, however, producing symptoms of dyspnea, there

is nothing to do but to withdraw some of the fluid, and the result is often favorable and without injurious effect upon the diseased lung, and without reaccumulation.

The withdrawal of a part of the fluid, and the substitution in its place of air has also been found to be of value.

In empyema aspiration may at first be tried, but is rarely successful, the fluid soon re-accumulating. Operation by the exition of a portion of a rib, as in ordinary cases of empyema, would seem to be the only alternative, and if the pulmonary disease is not too far advanced and the fluid is free from tubercle bacilli, I see no reason why the operation should not be successful.

FEVER

Fever, of course, is an indication of active toxæmia, and the only real means of combatting it is absolute bed rest under open air conditions. In the majority of cases this proves effective, although it may be a very long process, extending over many months, it may be.

There are, however, not a few cases, unfortunately, in which the fever persists after long immobilization and the local lesion progresses, and the ultimate issue becomes very dubious. In these cases artificial pneumothorax, if it can be done, may turn the scales in the right direction and lead to the arrest of the acute symptoms. This, of course, depends upon the absence of adhesions and the integrity of the contralateral lung.

Experience has shown that the result of this procedure is sometimes most striking; the fever disappears and with it the other unfavorable symptoms.

I do not believe that any antipyretics are of value.

LARYNGEAL TUBERCULOSIS

This unfortunate complication is a difficult one to deal with, and when it occurs in advanced disease it is practically hopeless. In earlier cases the outlook is more favorable, and the present treatment of rest, simple disinfection, and heliotherapy has produced many cures of this distressing symptom.

The rest, however, must be absolute; no word must be either spoken or whispered. There are now devices by which the patient himself can reflect the rays of the sun upon his own vocal cord. Other than a simple disinfectant fluid or vapor, no local applications are indicated. In advanced cases where there is much infiltration and ulceration the electrocautery has been found useful.

The aid of the laryngologist will often be required to make a differential diagnosis.

When dysphagia exists—a most distressing symptom—the insufflation of orthoform or anæsthesia, menthol or cocaine are local palliatives. When such applications fail there is the proceed-

ure of injecting the superior laryngeal nerve with 85% alcohol if one has anatomical knowledge enough to do it. When the epiglottis is involved amputation may be indicated.

In spite of all we can do—the dysphagia is so severe that these unfortunate patients actually die of inanition.

DISCUSSION

The discussion was opened by Dr. Olin S. Pettingill, and was further discussed by Doctors Lord, Hawes, Clifford, Wagner, Hill and Floyd as follows:

DR. O. S. PETTINGILL: Mr. President and Members, I hesitate to discuss this paper after hearing Dr. Otis because he has left very little of importance to say. In regard to hæmoptysis, I think we can well divide the cases as far as prognosis goes into those with fever and without. Cases with fever have a far different prognosis from those without fever, especially the case that begins with a high fever before blood appears. The case without fever is almost always due to trauma.

Then the question comes up of how long to rest the patient in bed. Of course, the patient who has had a fever with his blood spitting should be rested in bed longer than a patient without fever regardless of the amount of blood lost in the hemorrhage.

Posture is of some importance, or the position a patient should assume in bed. When I was at the Rutland State Sanatorium it was the routine treatment to take the pillow from under the patient's head and even elevate the foot of the bed with the idea that this position would help the blood clots gravitate to the larger bronchial tubes and stop to some degree the extension of the disease downward to the base of the lung as often occurs. Later, while I was at the Rhode Island State Sanatorium the routine treatment was to sit the patient up in bed or in partial sitting position. From my observation of these two procedures I could see no difference in the amount of lung involved after the hemorrhage was over. Of course, in those days we did not have the X-Ray to check up our physical findings.

As to the immediate treatment of the hemorrhages—I cannot remember seeing a fatal case of hemorrhage unless it occurred within three or four minutes after the hemorrhage started. As for stopping the bleeding at this time I feel that is either the undertaker's job or a rest in bed, medication having very little effect. Artificial pneumothorax, if we can locate the lung that is bleeding is the treatment par excellence.

The prevention of the extension of disease is always to be considered. We see some of these patients bleed and their sputum soon develops a foul odor with some fever which is probably due to secondary infection. In these cases, I wonder

if it is good therapeutics to use too much codeine and morphine to relieve cough. If you have ever had the experience of lying in bed thinking that every time you cough you are going to fill your mouth with blood and if you don't cough you have the sensation that you are going to drown or strangle and this keeps up for days you can well imagine what a hemorrhage patient goes through. It is simply humane in this condition to use codeine or morphine and to change the patient's position from ordinary rest in bed to a sitting posture depending upon the results of this change in position.

As to the use of nitrites—at one time we thought amyl nitrite was the treatment and we always hastened to the bedside of the patient with a pearl of amyl nitrite. I remember distinctly one case where the patient was rendered unconscious by the use of amyl nitrite on two different occasions, although it proved effective in stopping the hemorrhage. Dr. Burns of North Reading reported treating a series of patients with epsom salts. We have tried this but the principal objection was that it frequently upsets the patient's stomach causing vomiting, although the theory for its use is very reasonable.

The treatment of cough varies as to type. A non-productive case can be helped out surprisingly by having the patient exercise his will power to suppress it. Prolonged rest in bed is the only real cure for a cough. Many cases showing persistent cough are due to irritation in the upper respiratory passages. Treating this condition with nebulizer sprays of eucalyptus to soothe the respiratory mucous membrane is sometimes all that is necessary. We use codeia for cough in the last stages to make a patient comfortable and to relieve the cough temporarily in acute cases. The temporary suspension of coughing often lessens the irritation in the throat thereby curing the cough.

When it comes to treatment of tuberculous laryngitis I have lived through the lactic acid and the electric cautery stages. I think what ever you do locally is entirely wasted unless the patient's general health improves. The only local application we use at present is silver nitrate 10 to 40 per cent strength applied directly to the ulcer or granuloma. That soothes and at the same time is antiseptic treatment. Heliotherapy by use of direct sunlight and the so-called Kromayer light is tried as a matter of routine at the sanatorium. I do not know how much quackery is involved but this seems to help improvement in many of our cases. Absolute rest of the voice, not even a stage whisper, is the most important part of the treatment. Whispering by use of the lips only should be explained to the patient.

For night sweats the drugs we use mostly are strychnine and atropine. Strychnine as a tonic or in larger doses works well and atropine re-

lieves but makes the patient's throat dry and causes an unpleasantness if used for any length of time.

Dr. F. T. Lord: I have but little to say. I would like to ask Dr. Otis—I didn't understand your first class of hemorrhages.

Dr. E. O. Otis: The first class are the early and moderately advanced cases.

Dr. Lord: It has been my idea that all hemorrhages in tuberculosis came from cavities, and those cases with hemorrhage came from cavities, and the autopsy evidence supported this point of view.

Regarding the use of opiates in hemorrhage—I went over the Massachusetts General Hospital cases some time ago getting together some hundreds of cases of hemoptysis and analyzed this large series, those that were fatal, to see if I could find out why they were fatal. It seemed clear that there were two classes that proved fatal, one in which the hemorrhage itself was fatal, and the other that for some reason coincident or following the hemorrhage there was an extension of the tuberculous process; and as it turned out, the latter group was the larger group—those that died not in consequence of the hemorrhage itself. And this it seemed to me had a bearing on the treatment, conceding that an opiate subdues the impulse to cough and the retention of infected material and thus promotes an aspiratory broncho-pneumonia; and so it has been my custom to refrain from using an opiate in the presence of hemorrhage. But realizing that there are cases in which the patient is very excited in which the cough is very persistent and very little blood is brought up at the time in proportion to the cough, in such cases one might feel that subduing the impulse to cough might stop the hemorrhage.

Regarding night sweats—I took interest in various methods used for the treatment of night sweats and I may say I never found any to have any effect on night sweats. We experimented with many drugs and with bathing but I must confess I never found any thing helpful.

Dr. Otis referred to an important point in the treatment of empyema. When there are tubercle bacilli in the pus the procedure is aspiration; and when there are other organisms than tubercle bacilli in the pus, operation is the procedure of election. I believe that a great mistake occurs in certain localities in not observing these rules. Too often pus is found in the chest on aspiration and immediately operation is done because pus is found; but it is highly desirable that such pus should be examined under the microscope for the presence of Gram staining organisms in it, and if it proves not to contain such organisms, then a culture should be made. Sometimes we find organisms by culture when we can't see any with the microscope. If other organisms are present and tubercle bacilli too, in other words, if a patient

has a pure tuberculous empyema, aspiration is the operation of choice. If the patient has other organisms, then operation is the procedure of choice. Tuberculous cases tend not to get well after operation but to have persistent sinuses which last indefinitely.

The paper was further discussed by Dr. John B. Hawes, 2nd.

DR. R. CLIFFORD, Boston: There is very little I can add. One thing I would like to ask and that is in regard to climate. It has been my impression—it was told in Leysin that in patients who went to a high altitude and remained there for any length of time that there was always danger when they came down of hemorrhage or of reactivation of their trouble.

It seems to me in cough where there is productive cough and raising large amounts of sputum cough medicines are contraindicated because the object is to get rid of the sputum and the secretion that is retained in the cavity. I don't see in advanced cases why those cases shouldn't be put on postural drainage as cases of bronchiectasis are. I think by giving them cough medicines causing the retention of that secretion they would get toxemia. I would like to hear some comments on postural drainage—why it isn't indicated.

DR. H. S. WAGNER: For night sweats I had strychnine proposed to me some time ago, and tried it. It seemed to me I could reduce the amount of atropine by giving strychnine at the same time. I could get away with 1/150th grain of atropin and I could by giving 1/50th grain of strychnine get down to 1/200th or 1/250th grain of atropine and occasionally I could cut out the atropine. However, that didn't work in every case but it did seem worth trying.

In hemorrhage I believe in the partially recumbent position. The throat muscles can control the sputum and blood in that position better than when they are on the back or side. To come up into the elbow position means quite a good deal of muscular effort.

There are amyl nitrite, calcium chloride, ice-bags and cracked ice. Every good nurse will bring them in. The best thing the doctor can advise is that the patient should not get too much cracked ice for fear of a thirst, and shift the ice-bag over the heart. As far as amyl nitrite goes, in some cases it is effective, in others not. I suppose it may depend whether the hemorrhage may be from the arterial radicles or from the venous radicles. The principal thing is to get the patient's mental condition settled, and many times one will have to use a hypo of morphine, especially in private cases where there are relatives around and you have no special nurse to put on the case. In a private sanatorium the nurse should see that the bell cord is connected up near the patient and dem-

onstrated. Then in regard to the diet—cutting out all food except milk enough to quench thirst except in the case with too much cracked ice.

I think a good dose of salts within 18 to 24 hours after the hemorrhage is good procedure. If the patient has had morphine, that ought to be preceded by an oil enema and then the next morning a suds enema and then the salts will put him in a condition to have a movement, and if they can't use the bed-pan put a commode along side the bed.

As far as artificial pneumothorax is concerned, the cases in which I have given it haven't stopped bleeding any quicker than the others. In one case which I thought especially favorable for this treatment his condition was good and physical examination good and X-ray showed a small cavity on the right side underneath the fifth rib posterior, but two injections of 250 c.c. of air 18 hours apart didn't stop the hemorrhage. The hemorrhage continued for ten days, and in three weeks we got another picture. This showed that the upper lobe was under compression and over a cavity which the plate showed to be half an inch from the chest wall was an adhesion. So the lesson was to me that any cavity in that position will have a limiting membrane which will be tough, and artificial pneumothorax wouldn't separate it. It still would be adherent; and you could see this cavity persisting in the adhesions coming down from that point.

Cough—the patients should be taught repression of cough just as soon as they enter the institution before they have had hysterical coughing and vomiting. I regret very much we are not using heroin for I believe I got better results from heroin than from any other derivative of morphine.

There was one point—that is, the treatment by injections of calcium chloride in cases with tuberculous bowels. I can't say I have had much success but it has been tried. The cases where I tried it are not benefited as regards the pain in the abdomen or the diarrhoea.

Climate—I think that is a matter of mental therapy, but if one wants to choose a place, the best location I could recommend would be Denver because it is comfortable during both the summer and winter.

I think that posture is something that ought to be experimented with in all patients, when the cough is productive. All these hygienic habits ought to be pushed in anticipating the time when the incipient case may become far advanced.

DR. GEORGE S. HILL, Boston: I have been reminded of one or two things. The first is the use of alcohol. There is no question in my mind we can get a great deal of peace of mind in patients in the last stages of tuberculosis with whiskey. I had one patient where the family

objected to alcohol but I mixed it up with peppermint, and it worked well.

Night sweats—strychnine and atropine together form the best remedy for seasickness. The only thing I have had good results from is repeated doses of sage tea. Repeated doses of sage tea have as good effects as strychnine and atropine.

Dr. Wagner spoke of tuberculosis of the bowels. I am a great believer in the Alpine lamp for this condition. I don't know whether the Alpine lamp actually heals tuberculosis of the bowels or not. I think it helps to raise the resistance and helps to get rid of the gas, and have seen remarkable relief of symptoms and the patient's bowels stop running and the patient recover as far as symptoms are concerned. I think it is the thing to use.

DR. EDWARD O. OTIS, Boston (closing): In regard to intestinal tuberculosis—in all these cases of gastrointestinal disturbance I think one should bear in mind the possibility of tuberculosis and use the X-ray and all other means of investigation to prove or disprove the existence of this condition, and I agree with the President that the Alpine lamp, as shown by Dr. Stewart at the Ninette Sanatorium in Manitoba brings about improvement but not cure.

Atropine has been referred to several times, and perhaps I have a personal repugnance to using it in night sweats from my own experience. I heard it was good for seasickness and I took some at the beginning of a voyage before dinner and I found it was utterly impossible to eat a dinner and I think that that is the objection to its use—it dries up the secretions.

The emetic cough—the morning cough will produce emesis after breakfast, and that is really a serious symptom. And a warm drink early in the morning will serve to prevent that, and then the expedient of immediately lying down after taking breakfast or taking a little diluted chloroform—a few drops may relieve that distressing symptom.

I think what Dr. Hawes said was true that rest means bodily rest and also mental rest and I recall Dr. Bushnell saying that they could worry only one hour a day but they could pick out that hour.

Dr. Clifford brought up the point as to whether there was any danger in coming down from a high altitude as Colorado Springs which is 5,000 feet above the sea level to a low altitude. I do not see why there should be any danger and I don't recall any case where a recurrence of the disease occurred after coming down from a high climate altitude.

I can't agree with the President in regard to using morphine. I can't believe it is necessary and I believe I have seen cases of aspiration pneumonia come from too liberal use of it. Most cases of hemorrhage are bound to get well

of themselves even if you did nothing at all, and knowing that fact, I don't see why it is necessary to use such a strong alkaloid of opium as morphine.

The meeting adjourned at 9:55 P. M., the attendance being twenty-one.

GEORGE S. HILL, *Secretary*.

BIRTHS IN THE BOROUGH OF MANHATTAN FOR THE YEAR 1925

THE total number of births in the Borough of Manhattan in the year 1925 was 47,208. Of these, 17,110 were first births. This is equivalent to 36% and is approximately equally distributed in percentage for Negro and white. Thus, of the total number of white births, 37% were first births and of the total number of Negro births, 35% were first births.

MEDICAL ATTENDANCE

Of the total number of first births, 10% were attended by midwives and 90% by physicians. The percentage of medical as against midwife attendance is greater in the primiparous than in the multiparous group. In this latter group we find that 23% are attended by midwives and 77% by physicians. This represents a substantial change over conditions prevalent ten years ago. In former years, the percentage of births attended by midwives was substantially greater, and this was particularly true of our foreign population.

LEGITIMACY

Of the total number of first births, 96% were legitimate and 4% illegitimate, but of the total number of illegitimate births, 76% were first births.

PLACE OF BIRTH

Of the total number of first births, 28% took place in tenements and private dwellings and 72% in institutions.

	Total births	Total first births
White	47,208	17,110
Negro	42,710	15,547
	4,394	1,529
Japanese and Chinese	104	34
Native parents	15,207	6,685
Foreign parents	24,193	6,923
Mixed parentage	7,593	3,315
Unknown parentage	215	187
Attended by midwives	8,639	1,765
Attended by physician	38,569	15,345
Legitimate	46,285	16,412
Illegitimate	923	698
Tenements and dwellings	21,625	4,742
Institutions	25,583	12,355
Hotels	11	10
Other places	9	3

The public health significance of such a tabulation as this must be self-evident.—*Bulletin of the New York City Department of Health.*

The Massachusetts Medical Society

THE CONTROL OF THE COMMUNICABLE DISEASES PREVALENT IN MASSACHUSETTS*

With a Study of the Mortality Due to Them During the Past
Seventy-Five Years

BY EDWARD G. HUBER, M.D.

FOREWORD

This study has been conducted with the co-operation and aid of the Public Health Committee of The Massachusetts Medical Society. Its chief aim has been to present as tersely as possible the most approved and effective present day procedures against the communicable diseases which are notifiable in Massachusetts. The discussion is neither so concise nor so definite as might be desired, because of the fact that the subject is so extremely broad as to discourage efforts at brevity, and because so much of it must necessarily deal with phenomena whose causes are unknown. Facts which have been omitted may seem to some to be of more importance than others that have been given, and no doubt this is often true. One of the purposes of this study has been to present data which will encourage the practicing physician to coöperate more fully with the health department; another purpose has been to standardize control measures thus assisting materially in the successful administration of the campaigns of a health department against the communicable diseases. A basic sanitary code (chapter VIII) contains, very briefly, essential facts for each disease, from several standpoints. The writer is much indebted to Dr. Victor Safford, Dr. Roger I. Lee, and Dr. Thomas F. Kenney, chairman and members, respectively, of the Public Health Committee of The Massachusetts Medical Society for suggestions and advice which have been given at the meetings of the Committee and at other times, particularly relative to the details of the sanitary code.

The method for studying morbidity and immunity was suggested by Professor Edwin B. Wilson who, with Dr. Carl R. Doering, also very kindly gave advice as to the details of the method. Such studies require much better data than can be found at the present time but if in the future better morbidity statistics are collected this method or a modification may afford valuable information.

A considerable portion of the study is made up of an investigation into the mortality statistics of Massachusetts for the past three fourths of a century. No conclusions which have any bearing on the question of control measures have been drawn as a result of these statistical studies, but the data seem to be of sufficient interest to be recorded.

*Published by the Committee on Public Health of the Massachusetts Medical Society.

I. INTRODUCTION

The control of communicable disease is one of the most important functions of a health department in its relations to the interests and welfare of man. In fact, for centuries after the first board of health was established for the sole purpose of protecting against importation of epidemics, health authorities had no other duties. The almost unlimited police power and legislative authority now possessed by health boards is directly due to this recognition of the necessity for trying to control the spread of these diseases. But the present object of health administration is wider, including the prevention and eradication of disease whether communicable or not. Some of the newer work of health departments in the non-communicable disease field has yielded striking results, and since the restricted health department budgets must be made to produce the most easily and cheaply attained results, and also since communicable disease control is generally difficult, there has been a resultant tendency to emphasize other lines of work at the expense of the last named. The necessary funds come from taxation, and the health officer must show that actual beneficial results of economic value have been obtained through the money he has spent. The better his results, the more likelihood of increased budgets. Communicable disease control is generally unsatisfactory although there are a few diseases which could readily be controlled if the available knowledge were to be applied. The health officer realizes that the public still considers it to be his main duty to fight the infectious diseases although he well knows his helplessness with many of them.

The death rate for ages under five is greater than at any later period less than age sixty-five. A much larger proportion of the deaths in that quinquennium than in any other is due to communicable diseases. A successful fight against the infectious diseases would therefore lower the specific mortality rate for that age group and this would have a noticeable effect in lowering the crude death rate and in increasing the average age at death. There has been a sharp decline in infant mortality in the past twenty years, but the greatest number of deaths continues to occur just past the age of seventy. In other words there is no evidence that the actual span of life has been increased beyond the Biblical limit. The average age at death has increased,

due to the saving of lives in infancy and childhood, but it is too soon after the beginning of the reduction in infant mortality to be able to form any conclusions as to the ultimate fate of the individuals thus saved.

There has been a considerable decrease in the mortality rates for most of the communicable diseases in Massachusetts, as elsewhere, during the period for which mortality statistics are available. There has possibly been a tendency for those interested in public health measures to give those measures too much credit for this great improvement. Actually, no definite cause or causes for the decline in rates can be found. The diphtheria rate has been dropping since even before the cause of the disease was known. The reason or reasons for the remarkably uniform drop in the pulmonary tuberculosis rate are even more mysterious. There is some unknown complex environmental condition which has a much greater effect on conditions even in such a disease as small pox where theoretical control is perfect. It is increasingly evident that something more than the mere presence of carriers of virulent pathogens is needed to start an epidemic. Carriers are always on hand, but some unknown law controls the situation. As Professor E. B. Wilson suggests, the law of environmental pressure may be important in this connection. We have no idea what controls population, growth, a pandemic of influenza, or a sudden outburst of small pox when conditions do not seem to have been different than at numerous other times since vaccination became established. During the Middle Ages there was such a lack of ordinary sanitation and even of decency that the marvel is that the race escaped extinction during some of the devastating epidemics. The principles of hygiene were unknown, and when epidemics came, mortality was very heavy. There must have been a saturation limit for the virus, or entire cities would have perished. At the present time the pneumonia rate is approximately stationary, and apparently the pneumococcus has reached its saturation limit. If there were no such limit there is no apparent reason why it should not kill us all. There is some unknown factor which restricts the number of squirrels, flies, rats, sparrows and the like, for they are very seldom seen in numbers much exceeding a certain limit. When there is an occasional "bad" year there is generally a diminution during succeeding years. It is said that on the Kenai peninsula rabbits increase on a cycle of seven years, when an epidemic of disease all but exterminates them. But no matter how important the unknown factors, there are certain known control measures which do save sickness and death, and they should be applied. Measures which are of doubtful value and are restrictive in nature are unjustified, for when energy is spent in that direction, the re-

sults, even if successful, are insignificant compared with those developed by natural laws. Besides, such efforts do not conduce to cooperation on the part of the public.

However little the actual proof that the fall in the tuberculosis death rate has been due to the various campaigns against it, the fact remains that such measures pay, and pay well. The fights against venereal disease, typhoid, diphtheria, and small pox, to mention only some of those diseases affecting Massachusetts, have been well worth while if for no other reason than that they have encouraged a more decent manner of living. Pandemics like the last one cannot be prevented by any campaign now conceived of, but that should not discourage us for we can and do prevent much sickness, improve the environment, and make life more worth living. Any number of figures can be produced which can be made to show the beneficent results accomplished by public health measures, economically as well as in relation to mortality, but this is unnecessary. The public health worker does not need to show that his work is of benefit, for thinking persons can easily understand the value of control measures.

Protection against communicable diseases is of the utmost importance, for, as Peabody says, "Without private health, the individual is useless, without protection of the public health, government is a failure." Quarantine touches all the ramifications of society, and although it is intended for the benefit of man, it is capable of doing much harm. In order to protect the public from the wilfully careless and the ignorant, measures must be applied which restrain someone but the tendency is to decrease this more and more. In the past, quarantine has probably destroyed much property and many lives, but at the present time if it is unreasonably applied it is because those who administer the laws are wholly unfit to do so.

Certain classes of people have gone so far as to insist that improved general sanitation and cleanliness have been the only influences in reducing the mortality rate for small pox, typhoid and the like. But these diseases occur in all classes of society, the clean as well as the dirty. Nevertheless this idea has been prevalent for many years. Improvement in general sanitation is to be desired but known control measures are also important.

Another fallacious argument sometimes directed against efforts to control communicable diseases in infants is that such work saves the weaklings and thus increases mortality among older children. Possibly such criticism applies to money spent in the care of cripples and deformed, insane, deaf mutes, etc., if these individuals are later allowed to reproduce; but it is most certainly not true of the money spent in

combatting the communicable diseases, which attack the strong possibly even more readily than the weak. The vitality of the race is not decreased by preventing communicable disease in childhood even though some unfit individuals are saved. Infants who are subnormal in vitality die before a communicable disease attacks them, generally. Other defective infants who survive to adult life are no more susceptible to the communicable diseases than are the strong and healthy.

The various States differ widely in their respective methods of control of the communicable diseases. Some of them have but few laws or regulations, and others go to the other extreme. Some, like Massachusetts, have relatively few laws but have Boards of Health empowered to make necessary regulations. Such boards designate what diseases are in their opinion "dangerous to the public health," and the respective diseases named by these various boards also differ widely. As a general rule the diseases which are most fully legislated against are those most in the public mind, whether by horror of the disease because of undue past or present prevalence in the State or because of a vigorous educational campaign. It is unfortunate that there should be so wide a variance, for the police power of the State in health matters is so absolute that the courts uniformly uphold health boards even where individual rights are invaded or valuable property destroyed.

In too large a proportion of the States the control measures against some of the preventable diseases are altogether insufficient, and many laws would actually prevent proper control measures if they were enforced. There are errors of omission as well as of commission in the laws and regulations of many States, even concerning some of the commonest of the infectious diseases.

No matter how commendable the laws and regulations of a State are, there must be efficient enforcement, and sufficient funds to enable the program to be carried out. Not that the law must be frequently invoked to compel certain actions, but if there is a good law, and it is well known that means will be applied to enforce it if necessary, tact and moral suasion will do much to secure coöperation. Unfortunately law enforcement is no more uniform among the States than are the laws themselves.

Nor are all the current laws and regulations modern. The former are more likely to be obsolete than board of health regulations, since greater machinery is required to make and unmake laws. Yet some boards have been woefully behind in the advance in sanitary knowledge. Certain matters such as compulsory small pox vaccination, school inspections, notification of disease and the like should be matters of legislation, but most control measures may well be covered by board of health regulations which can

easily be altered as science increases our knowledge. The argument that such boards, by reason of their special knowledge, make decisions based on data not known to the body of citizens, and which do not, therefore, have the full moral support of the latter, may be nullified by having a board of health made up of representative citizens from various professions, who can act as a small but very intelligent legislative body.

(To be continued)

MILK CONFERENCE

DR. BIGELOW, Commissioner of Health, held a conference with milk producers June 26, 1926, at the State House for the purpose of preparing regulations relating to the handling and production of milk to be submitted to the legislature next winter.

A bill was introduced at the last legislative session which was designed to prevent the sale of unpasteurized milk and milk produced by cows not tested for tuberculosis. This matter was referred to the next annual session.

Representatives of the Grange, the Massachusetts Farm Bureau, the agricultural colleges, the Massachusetts Dairy Men's Association, the Division of Animal Industry and various individuals interested in milk production have been invited to this conference.

This is a very important matter from the standpoint of prevention of disease and also because it involves very definite financial problems.

INFANT MORTALITY FOR 1925

THE American Child Health Association reports that the infant mortality rate for 1925 for the cities in the birth registration area which includes the District of Columbia and thirty-three states, is 72.5 per 100,000. In 1924 the rate was 72.2. Among the greater cities New York leads with a rate of 64. The rates of the other large cities are as follows: Cleveland 66, Los Angeles 67, Chicago 75, Philadelphia 77, Detroit 77, Baltimore 82, Pittsburgh 82, Boston 85 and Buffalo 86.

CAMPAIGN AGAINST DEFECTIVE GAS FIXTURES

DR. LOUIS I. HARRIS, New York Commissioner of Health, reports that 607 deaths resulted from accidental asphyxiation by gas in 1925, and it is believed that the health of many persons was seriously affected because of defective fixtures.

An amendment to the Sanitary Code will require the registration of all forms of flexible gas tubing and only those meeting certain specifications may be sold after August 1, 1926.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY

RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12271

A CASE OF COMA

MEDICAL DEPARTMENT

A married Italian woman thirty years old came to the Emergency Ward February 16, three years before her second admission, complaining of severe cramp-like abdominal pain, with vaginal flowing, both of three days' duration. She had missed her menstrual period December 25. There was considerable language difficulty in taking the history.

She gave a history of two miscarriages, occasional mild frontal headache, frequent periods of dizziness, frequent blurring of vision and specks before her eyes, and marked dyspnea on exertion. For a year she had had sharp non-radiating precordial pain upon exertion, relieved by resting.

Examination showed the apex impulse of the heart in the fifth space 2 cm. outside the mid-clavicular line. There was no enlargement to percussion. There was a systolic murmur maximal at the apex, not transmitted. The radials were slightly palpable. The blood pressure was 230/130 to 250/120. The abdomen showed tenderness across the lower quadrants, maximal 6 cm. to the left of midline low down. Pelvic examination showed the uterus of normal size, anteфлекed. The fundus was slightly irregular, suggesting small fibroids. Anterior to the uterus was a round tumor the size of a golf ball, probably a pedunculated fibroid, although it might have been of ovarian or bladder origin. There was slight thickening and tenderness in the region of the left broad ligament.

At one of two examinations the urine was red, neutral, showed a trace of albumin and sediment loaded with red cells. The blood showed 7,400 leucocytes, 3,440,000 to 3,430,000 reds, hemoglobin 60 per cent. A Wassermann was negative.

The temperature was 96.9° to 99°, the pulse 59 to 90, the respiration 15 to 29.

The bleeding stopped by February 18. February 21 she was discharged to the Out-Patient Department for observation. She did not however report at the Out-Patient Department.

At the time of her second admission, February 16, three years after her first admission,

she was comatose. The history was given by her husband and brother, and is probably inaccurate in detail. A year after her first admission she was operated upon at another hospital for possible tumor and tube. Her catamenia were thought to be irregular and at times were profuse. There was a questionable history of dyspnea and palpitation, hemoptysis and night sweats.

January 6, six weeks before her readmission, she was operated upon at another hospital for "tumor of the womb and appendix". Before this she had had dull pain in the right lumbar region, pain in the right lower quadrant, occasional vomiting and headaches. There was some story of urination two or three times at night. At her return home, two weeks after the operation, she complained for the first time of left temporal and frontal headaches, practically constant, but more severe at times, associated with vomiting and failing vision. A change in glasses gave no relief. Three weeks before her readmission she began to urinate four or five times at night, passing very large amounts of dark urine with a very strong odor. A week before her readmission the headaches became more severe. She had violent projectile vomiting and oliguria, with a suspicion of hematuria. The physician in attendance said she had high blood pressure. February 15 she had absolute anuria, delirium, agonizing headache, swelling of the face, hands and legs, and on the hands, thighs and left arm red spots which later turned bluish.

Examination showed a poorly nourished, semicomatose woman, very pale, sick and restless. The breath was slightly ammoniacal. The skin was rather dry. There were many pigmented moles and several small red spots on the skin. The teeth were bad. There was pyorrhea. The chest showed harsh breathing and dullness, with a few râles posteriorly, more on the left. The apex impulse of the heart was seen and felt in the fifth space. The left border of dullness was 13½ cm. from the midline, 5½ cm. outside the midclavicular line. There was a short apical systolic murmur. The aortic second sound was markedly accentuated. The vessels were somewhat thickened. The blood pressure was 240/140. The abdomen showed a long median scar. Pelvic examination showed slight discharge, some tenderness in the vaults, lacerated cervix. The ankles and eyes showed slight pitting edema. The pupils were normal. The fundi showed marked albuminuric retinitis. The discs were obscure. The knee-jerks were hyperactive.

The urine was pink at one of two examinations, alkaline with a large trace of albumin at both, specific gravity 1.010, amount not recorded. Both sediments showed many leucocytes, frequent to occasional red blood cells. Blood examination showed 36,500 leucocytes, 93 per cent. polynuclears, hemoglobin 35 per cent.,

2,232,000 reds, no achromia, marked variation in size, platelets reduced. Wassermann negative. Non-protein nitrogen 125 mgm. Uric acid 4.7 mgm. Chlorides 574.7 mgm. Calcium 8.4 mgm. Inorganic phosphorus 4.8 mgm.

The temperature was 99.5° to 104°, the respiration 24 to 40, both rising. The pulse rose from 124 to 146, then dropped to 123.

Fluids were forced and rectal taps given every three hours, six ounces of five per cent. glucose. February 17 500 c.c. of 7½ per cent. glucose and 20 c.c. of 3 per cent. calcium chloride was given intravenously, and 1250 c.c. of glucose solution with 30 c.c. of the calcium chloride by gastric gavage.

By February 17 there was dullness mostly at the left base, with harsh breathing but only rare râles. No friction rub could be heard over the pericardium. That evening the patient died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

1. We seem to have two sets of symptoms here, referable (a) to the genital tract, the uterus, and (b) to the circulatory apparatus:—the headache, dyspnea, and anginoid pain I imagine are the important symptoms. The latter may be angina, but it is an unusual thing at her age, thirty.

2. When the breasts are pendulous and do not give us the landmark of the nipple we then divide the clavicle in two and dropping an imaginary line say that this is where the heart's apex should be. If it is outside of that it is enlarged.

3. This blood pressure is one of those we do not have to doubt about; it is obviously increased blood pressure.

4. Of course with fibroids—if they are fibroids—we can easily get the symptoms she has had. We do not need to suppose an extra-uterine pregnancy or anything else.

5. In any urine in a woman, unless we have a catheter specimen, the presence of red or white cells is of no importance, because they may come from the vagina. So we do not really know anything about the sediment.

6. She is having flowing from the uterus, and I presume that that is the cause of her anemia.

7. She has a little temperature.

8. She stays in the hospital two days. The flowing stops. In a week she is discharged to the Out-Patient Department, to which she never reported, which is what patients usually do.

9. That high blood pressure certainly was not due to any of her uterine troubles. It is certainly something else. So we expect farther evidence about that.

NOTES ON THE PHYSICAL EXAMINATION

1. I take it those were hemorrhagic spots on the skin. Did you get any evidence of anything on the skin, Dr. Richardson?

DR. RICHARDSON: Not on the skin.

DR. CABOT: She had then subcutaneous and internal hemorrhages.

2. "Ammoniacal" is the word we use here instead of "urinous".

3. Five and a half centimeters outside the midclavicular line is the essential thing. That is two inches and more out. The aortic second sound was markedly accentuated, as we almost always find it in hypertension.

4. There is no such thing as albuminuric retinitis. It merely means hemorrhages old and new. Hemorrhages we may get without kidney disease or with kidney disease. They mean degeneration of those vessels with rupture and pouring out of blood. But they mean essentially hypertension, however caused, whether associated with arteriosclerosis or with nephritis or with neither. I have seen them when there was no nephritis and no arteriosclerosis. "Albuminuric" is an inference and not an observation. All we see is retinitis, and all the retinitis means is hemorrhage.

5. There is a bad secondary anemia, presumably depending on a nephritis.

6. The non-protein nitrogen is high, but I am not surprised.

7. The chloride, calcium and phosphorus are not tests we ordinarily make. They are done for some special investigation now going on, I suppose.

DIFFERENTIAL DIAGNOSIS

What is the diagnosis?

A PHYSICIAN: Chronic nephritis.

DR. CABOT: You see she is too young to have hypertensive trouble due to any other cause. It must be a chronic nephritis. And what shall we find in the heart?

A PHYSICIAN: Hypertrophy and dilatation.

DR. CABOT: Yes, and nothing else. We have no reason to suppose any valve trouble. This is just the sort of case where we often get an acute pericarditis. There is a note that they did not find any, but that does not prove anything.

We can go a little further, but not much. At her age chronic glomerulonephritis is commoner than chronic vascular nephritis. But I have been wrong so many times when I have tried to say what type of chronic nephritis is present that I rarely try now. It does not make any practical difference. I think she had had nephritis for over three years. She had it when she was here before. It was the cause of her hypertension.

She will have passive congestion and nothing else that I see except this big heart. She died of uremia, I should say.

A PHYSICIAN: How about the 36,000 leucocytes with 93 per cent. polynuclears?

DR. CABOT: That is a good point. We can have that from uremia alone, a toxic leucocytosis. But it is commoner to have some inflammatory terminal process such as a pneumonia to account for it. It is perfectly possible. We cannot say. It is the commonest terminal infection; pericarditis is a good second. There is just as much reason for one as for the other,—no reason at all for either, except general experience.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Chronic nephritis.
Uremia.
Bronchopneumonia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Chronic nephritis.
Hypertrophy and dilatation of the heart.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

Chronic nephritis.

2. *Secondary or terminal lesions*

Hypertrophy and dilatation of the heart.
Arteriosclerosis.
Chronic passive congestion of the lungs.
Small hemorrhagic areas in the brain.
Hemorrhagic areas of the mucosa of the stomach and the small intestine.

3. *Historical landmarks*

Chronic pleuritis.
Obsolete tuberculosis of a bronchial lymphatic gland.
Chronic perihepatitis.
Scar of old operation wound.

DR. RICHARDSON: In this case we examined the head.

DR. CABOT: Does anybody want to say she had a cerebral hemorrhage or tumor or meningitis? I do not. I think it will be a normal brain.

DR. RICHARDSON: In these cases of chronic nephritis every once in a while we find cerebral hemorrhages. There was a hemorrhage in this case, to be sure small, but still worth noting. The brain weighed 1265 grams, and other than for considerable pallor of the tissue it was negative except that in the region of the posterior tip of the right occipital lobe there were several small frank areas of hemorrhage, and in the basal ganglia in scattered places a few hemorrhagic points and areas. The vessels of Willis, etc., were negative.

Trunk. The skin was pale, the gastro-intestinal tract negative, except that there were

small scattered hemorrhagic areas in the mucosa of the stomach and intestines.

There was obsolete tuberculosis in one of the bronchial glands. The lungs showed chronic passive congestion, no pneumonia. The pericardium was frankly negative. The heart weighed 564 grams—a markedly enlarged heart, with a very thick myocardium, four millimeters on the right and nineteen millimeters on the left. There was a little dilatation on the right, on the left no definite dilatation. The valves and coronary arteries were negative. A hypertrophied and dilated heart with nothing in the heart to account for it.

The aorta showed scattered along it here and there smaller and larger areas of arteriosclerosis sufficient in amount to be recorded as arteriosclerosis.

The liver showed nothing definite, no definite passive congestion. The spleen was a little enlarged, but still the tissue would pass without any remark. The kidneys weighed 212 grams,—quite small. They showed the characteristic picture of chronic nephritis, granular surfaces, tough tissue, with loss of markings, etc. The nephritis was of the arteriosclerotic type, although from the arteriosclerotic changes in the vessels of the kidney there seems to be a good deal of atrophy for the amount of arteriosclerosis.

She had been operated on, and there was question as to whether the ureters had been tied off. The ureters were negative; they had not been tied off.

The uterus was wanting except for a surgical stump. The tubes were wanting; a few fibrocystic ovarian-like remnants were present.

DR. CABOT: Do you think the hemorrhages in the brain contributed to her death?

DR. RICHARDSON: I should not think one would die just from those, but it was an additional straw, I suppose.

DR. CABOT: I do not make much point of the therapeutics in these cases, because therapeutics which end in death is not brilliant, and I see no particular reason to dwell on that. It did not accomplish anything at all, and probably would not again in such a case.

I take it that the leucocytosis was of the toxic variety. No infectious process was found.

CASE 12272

A PROBLEM IN THE DIAGNOSIS OF SEVERE UPPER ABDOMINAL PAIN

SURGICAL DEPARTMENT

An Irish-American electrician of thirty-seven entered through the Emergency Ward June 5. The chief complaint was severe abdominal pain and vomiting. The history he gave at this time is supplemented below from the rec-

ords of previous visits to the Out-Patient Department.

He was well until five years before admission. At that time, while a soldier in France, he became subject to attacks of pain in the epigastrium and the right upper quadrant occurring at irregular intervals, coming on an hour to an hour and a half after eating and sometimes followed by vomiting. The pain was non-radiating; at times it was very severe. He had no hematemesis, jaundice, or bloody, tarry or clay colored stools. Gastro-intestinal X-ray studies four years before admission were said to have shown a duodenal ulcer. A cystoscopy and a pyelogram were negative. His appendix was removed at this time. After his discharge he had a few months of freedom from symptoms.

The attack for which he entered the wards began twelve hours before admission with moderately severe upper abdominal pain lasting an hour. It was then relieved, and he had supper ten hours before admission. Two hours later the pain recurred in very severe paroxysms accompanied by vomiting. The pain extended across the whole upper abdomen. It did not radiate to the back.

Examination showed a well nourished man lying doubled up in bed, apparently comfortable at times, then crying out with severe abdominal pain which was accompanied by vomiting. The examination was negative except for the abdomen. In the epigastrium and the right upper quadrant there was marked tenderness and spasm, present also to a less degree down the right abdomen.

Operation was done the day of admission.

(The rest of the history is given with the operation.)

DISCUSSION

BY MONROE A. MCIVER, M.D.

The clinical picture presented by the patient on admission was that of serious intraabdominal pathology. The sudden onset and severity of the pain, the frequent vomiting, the amount of muscle spasm and tenderness made it clear that we were confronted with one of the major types of surgical emergency. The fact that the patient had had for a number of years symptoms consistent with duodenal ulcer suggested the possibility that a perforation had occurred. The abdominal signs were against this diagnosis, since the pain, tenderness and muscle spasm were not generalized but were somewhat more marked in the upper abdomen, and furthermore the pain was not constant but had a tendency to come in paroxysms. It was thought most likely that the symptoms were caused by an acute intestinal obstruction, the gravity of the situation suggesting that there was interference with the circulation of the obstructed loop. The

previous operation pointed to adhesions as a possible etiological factor.

The patient volunteered the information that X-ray examination had shown an ulcer, and that he had received dietary treatment.

PRE-OPERATIVE DIAGNOSIS

Acute intestinal obstruction.

OPERATION

Gas-ether. Upper right rectus incision. There was a small amount of free fluid in the peritoneal cavity, but no evidence of fat necrosis. The stomach and intestines were normal in appearance. In the lesser omentum and the meso-appendix there was a green jelly-like material which was taken to be extravasated bile. The pancreas appeared swollen and edematous, and upon palpation was very hard. The gall-bladder was full of small stones. The gall-bladder was removed and the common duct incised. Numerous small stones were removed from the region of the ampulla of Vater. Two catheters were placed in the common duct, one upward toward the hepatic duct and the second downward in the region of the ampulla. A cigarette drain to the stump of the cystic duct, another to the lesser peritoneal cavity above the stomach and a third to the lesser peritoneal cavity below the stomach and the colon.

PATHOLOGICAL REPORT

A gall-bladder 7 cm. long filled with many tiny black stones, with smooth pale red mucosa and thickened walls.

Microscopic examination shows papillary hyperplasia of the mucous membrane. The walls are thickened by fibrosis and wandering cell infiltration.

Chronic cholecystitis.

FURTHER DISCUSSION

The pathological condition found upon opening the abdomen was most interesting. The pancreas was greatly swollen, edematous in appearance and of stony hardness. It constituted a tumor of considerable size in the upper abdomen. It was carefully examined through an opening in the lesser peritoneal sac, but no area of softening or hemorrhage could be detected. There was no fat necrosis.

HISTORY, CONTINUED

There was profuse drainage of bile after the operation. The tubes were connected with a bottle. The temperature during the week following the operation ranged from 102° to 98.1°, the pulse from 145 to 73. On June 9 the patient was started on a fat free diet, with ox bile. The wound was in good condition, with some redness around the stitches in the upper part. A blood Wassermann was negative. The blood sugar

was 105 mgm. June 12 and 13 the lower catheter was loosened and withdrawn a little and June 14 it was removed. The temperature and respirations were normal and the pulse 80 to 99. June 15 the cigarette wicks were loosened and the following day two were withdrawn. The third wick was so adherent that gas was given on its removal. A Miller wick was inserted for a day or two. On the 19th there was very little bile drainage. There was slight to moderate discharge. By June 22 all the drains were out. On June 24 the patient was discharged.

FURTHER DISCUSSION

The most interesting question in connection with the case is the cause of the pathological condition of the pancreas. The appearance of the pancreas at the operation and the course of events afterwards suggested that we were dealing with the results of a chemical and mechanical injury rather than with a bacterial infection. I believe the most probable explanation is that one of the numerous small stones found in the common duct had plugged the opening of the pancreatic duct at the papilla of Vater; or it is possible that there was actually a pancreatic calculus obstructing the outlet of the duct.

The X-ray diagnosis of duodenal ulcer is so frequently correct that it is well to keep in mind the fact that gall bladder pathology may occasionally cause so much reflex disturbance of the duodenal motility that the X-ray studies may suggest ulcer.

LATER NOTE

October 15, four months after his discharge, the patient telephoned that he was feeling very well and had had no more pain or jaundice. There was occasional slight tenderness in the region of the wound.

DIAGNOSIS

Cholecystitis with cholelithiasis.
Acute pancreatitis.

CASE 12273

A CASE OF NEGLECTED HEMATURIA AND ITS RESULTS

UROLOGICAL DEPARTMENT

An American thirty-five years old entered the hospital for the first time January 25 complaining of hematuria. His wife had had one miscarriage. He had always been well and strong. Seven years before admission he had a mild attack of influenza.

Two years before admission he had an attack of hematuria lasting a few days without frequency, burning or dysuria. For a year and a half he had similar attacks about once a month

lasting from three days to a week. For the past six months he had seen blood and "pus" in the urine about half of the time. Two months before admission he had a hacking cough which lasted for two weeks. For the past few weeks he had urinated once at night and for the past week twice. During the day he urinated five or six times. There was some urgency.

Before he entered the Massachusetts General Hospital he was seen at another hospital. January 10 a urologist of the staff of both hospitals did a cystoscopy. He saw three papillomata, one of which covered the left ureteral orifice so that he could not catheterize it. Urine from the right kidney showed pus which was reported as showing tubercle bacilli. Cystoscopy showed also something which the examiner could not say positively was a stone; it might have been a sloughing papilloma. X-ray showed a shadow in the right kidney interpreted as a large stone; also a shadow in the bladder, possibly another stone. A right pyelogram showed a much enlarged and deformed pelvis and calices.

Examination showed a well nourished, flat-chested man. The heart was not enlarged. There was a systolic murmur at the apex. The blood pressure was 170/110. The rest of the examination was negative.

Before operation the temperature was 97° to 99.2°, the pulse 65 to 100, the respiration normal. The urine was cloudy, specific gravity 1.010, a trace of albumin at the single examination, amount 75 to 90 ounces, sediment loaded with leucocytes, red cells and bacteria. Renal function 40 per cent. The blood is not recorded. A Wassermann was negative. The non-protein nitrogen was 31 mgm. per 100 c.c., uric acid 4.2 mgm.

The patient remained in unchanged condition for a week. January 31 operation was done. He made a good convalescence. March 3 a cystoscopy was done, and March 6 a second operation. He again made a good convalescence, and March 26 was discharged relieved.

After leaving the hospital he returned weekly to the Out-Patient Department for dressings. By May 20 the wound had completely healed and he had made considerable progress. He had some frequency of urination at night. A week before his second admission, October 14, he complained of tightness in his left flank and noticed some blood and considerable mucus in his urine. During the week he felt nauseated and vomited several times, usually half an hour or so after meals. The tightness persisted and his left side was tender. His physician found his temperature 100.8°.

Examination at his second admission showed very slight tenderness in the left upper quadrant. The knee-jerks were sluggish. During the two weeks before operation the temperature was 96.4° to 101.4°, the pulse 70 to 100, the respira-

time normal. The urine was cloudy, alkaline, specific gravity 1.008 to 1.010, a slight trace to a trace of albumin at all of three examinations, the sediment loaded with pus and bacteria, 10-12 red blood corpuscles at one examination. Blood, leucocytes 12,900. Renal function 20 per cent. Wassermann negative. October 27 and 28 the non-protein nitrogen was 55 to 105 mgm., the uric acid 4.32 to 6.28 mgm. By X-ray both kidney shadows were obscured by a large amount of gas in the intestinal tract. Just below the sacroiliac joint on each side were linear shadows of increased density which suggested calcification of the iliac arteries. As the patient seemed rather young for this it was suggested that the examination be repeated after catharsis.

The patient was put upon constant drainage. He vomited occasionally, usually without relation to meals, and at night. His left side became less tender. October 23 the physical and mental condition was not so good. Subpectorals were started.

October 26 a cystoscopy was done, and October 28 operation. Next day the patient had Cheyne-Stokes respiration, twitching of the right hand, and dry mouth. The lungs were negative in front. The back was not examined. Fluids were kept up by subpectorals and rectal tap water. Hot packs were used. October 31 the patient was brighter but very much dried out. November 2 he was given 300 c.c. of 5 per cent. sodium bicarbonate intravenously. He showed slight improvement. November 4 the intravenous bicarbonate was repeated. November 6 he seemed better. The non-protein nitrogen however was 145 to 130 mgm., the uric acid 7 to 12.5, the creatinin 8.75 to 9.97. November 11 there was a little blood in the sputum. November 12 the respirations were 48 and the temperature and pulse both elevated. The lungs, especially the right, were full of coarse râles. November 14 the patient died.

DISCUSSION

BY HARVARD H. CRABTREE, M.D.

There is a little bit to add to this history. I saw this man and examined him about one month before he came to this hospital. He had had gonorrhea four or five years before, which antedated his hematuria. For that trouble he went to a person whom he termed a "quack," in whose care he had remained all the time up to about two weeks before I saw him, when he went to a regular and competent practitioner who of course straightway suspected that there was something radically wrong as the cause for all this blood and pus in the urine.

I might add that these first X-ray plates showed marked arteriosclerosis of the pelvic vessels, on which the roentgenologist commented on account of the patient's age, only thirty-five.

The first symptom given here is hematuria. This examination showed two possible sources. (1) The papillomata. They were typical in appearance, although the one over the left orifice looked rather old and would suggest that it might possibly be undergoing malignant changes. It was so situated that I could not get any evidence on the left kidney. This mass which I was uncertain about—as to whether it was a stone—looked like a stone except that it was rather irregular; a piece of sloughing papilloma will sometimes resemble a stone.

A cystoscopy with papillomata present is difficult on account of some bleeding, and the view is often imperfect. These papillomata were too advanced to permit of their being removed through a cystoscope by fulguration.

(2) The other possible cause of his hematuria is the stone in the right kidney. That stone may have been there two years, and may have caused his hematuria. On the other hand the papillomata looked as though they might be at least that old, and I should guess that they were the more probable original cause. There is no mention here of any renal colic, although he might have bled without it. Painless hematuria at frequent intervals is more typical of papilloma than of anything in the kidney except occasionally a renal tumor.

This urine from the right kidney contained pus and was reported as showing tubercle bacilli. That was not a guineapig test, but a sediment test done in a first-class hospital laboratory. It is unusual to find tuberculosis and an ordinary stone in the same kidney; it is not impossible, but does not happen very often. We find calcification, a crumbling formation, but not very frequently definite dense stones.

The blood pressure of course is high for a man of thirty-five, but it is apparently consistent with the arteriosclerosis which X-ray showed, at least in the vessels of his bony pelvis.

There is only a slight temperature here—very little evidence of any infection.

He apparently had a good amount of urine, and there was reason enough for the leucocytes and the red cells. Ordinarily a report of bacteria in a routine examination means bacteria other than tubercle bacilli. With these papillomata and a question of stone in the bladder, and certainly stone in the kidney, we might reasonably look for a mixed infection. His renal function is low, but the non-protein nitrogen is normal; the uric acid a bit high.

I believe that the first operation was on his bladder, for multiple papillomata and possibly stone in the bladder.

DR. CRABTREE'S PRE-OPERATIVE DIAGNOSIS

Multiple papillomata, possibly stone in the bladder.

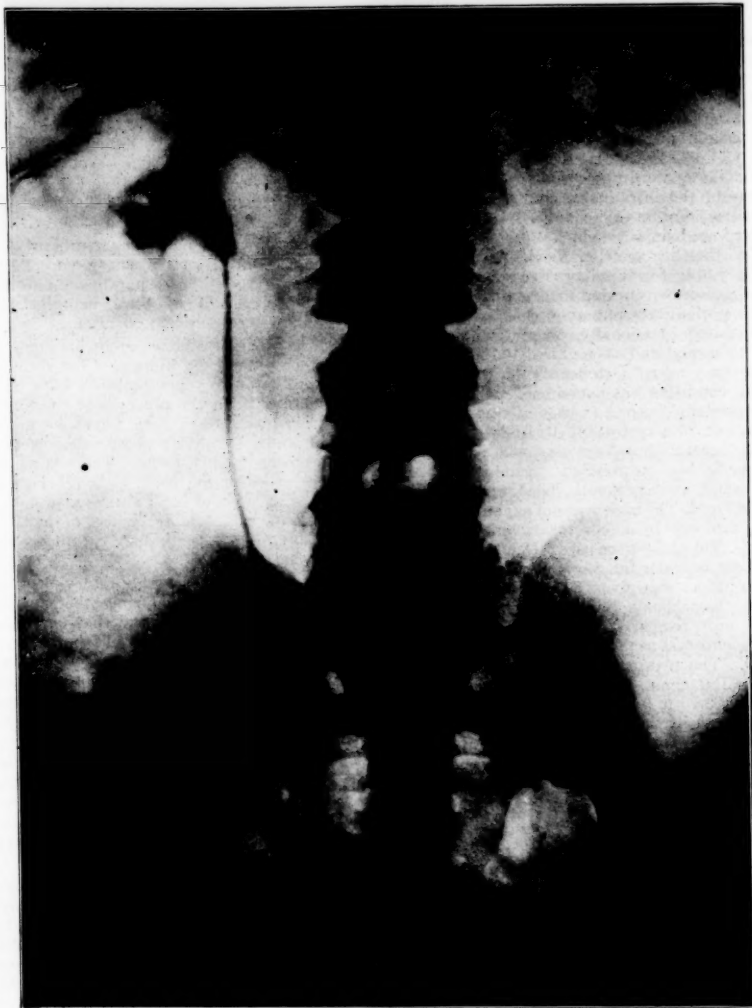


PLATE I. Right pyelogram taken January 10, two weeks before admission to the Massachusetts General Hospital. Taken before injection. Shows a shadow in the right kidney interpreted as a large stone; also a shadow in the bladder, possibly another stone.

PRE-OPERATIVE DIAGNOSIS JANUARY 31

Tumor of the bladder.

FIRST OPERATION

Gas-oxygen. The bladder wall was considera-

bly thickened. Three large pedunculated very friable tumors were found, one about the size of a hazel nut on the left anterior wall, another the size of a hen's egg apparently just to the side of the left ureter, and another somewhat larger just internal to this. All three were

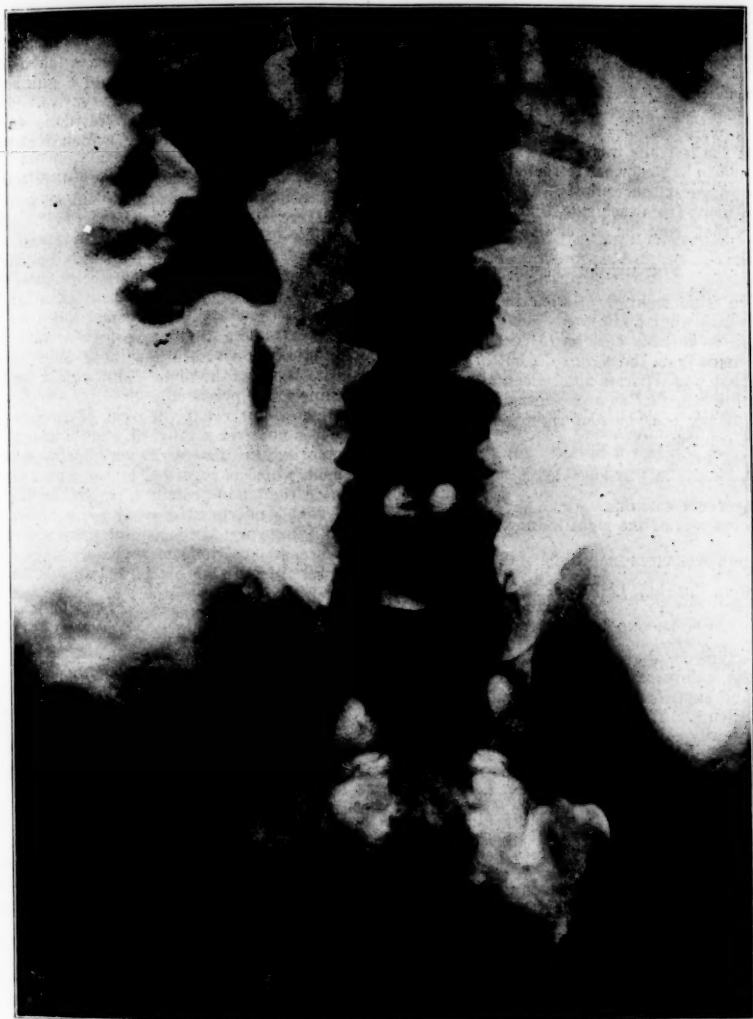


PLATE II. Right pyelogram January 10, taken after injection. Shows a much enlarged and deformed kidney pelvis and calices.

removed by cutting their bases with scissors and cauterizing with actual cautery. Neither ureter was seen, although a jet from each was visible.

PATHOLOGICAL REPORT

Papilloma.

DR. CRABTREE'S PRE-OPERATIVE DIAGNOSIS

Tuberculosis of the right kidney.

PRELIMINARY DIAGNOSIS, MARCH 3

Tuberculosis of right kidney.

CYSTOSCOPY

There was no pain or intolerance. The bladder was red, but looked quite normal. There was no evidence of papilloma, except in the region of the left ureter, where there seemed to be a small area suggestive of papilloma. Both ureters were cauterized without difficulty, although the left one was a little hard to find, as it seemed to be somewhat retracted. The picture did not suggest tuberculosis. There was a good flow of urine from each side, that from the right cloudy, that from the left clear.

FURTHER DISCUSSION

There is no mention of stone in the bladder. Apparently what I saw was a slough.

There is no note here as to the bacteriology of the urine from the right side, but in the other hospital it was reported that it contained tubercle bacilli. So that as a pre-operative diagnosis I should say that he had right renal calculus and tuberculosis.

DR. CRABTREE'S PRE-OPERATIVE DIAGNOSIS

Right renal calculus.
Tuberculosis of the right kidney.

PRE-OPERATIVE DIAGNOSIS, MARCH 16

Stone in the right kidney.

SECOND OPERATION

Gas-oxygen. Right lumbar incision carried from the costovertebral angle to a point an inch above and anterior to the anterior-superior spine of the ileum. The kidney was very adherent and evidently considerably infected. The ureter was large, thickened and adherent. The pedicle was unusually large and was clamped with difficulty. The kidney and ureters suggested the presence of tuberculosis, but this appearance could be accounted for by infection from the large calculus found in the kidney pelvis.

PATHOLOGICAL REPORT

Microscopical examination shows diffuse wandering-cell infiltration and fibrosis. There are focal collections of wandering cells in the cortex composed largely of mononuclear cells with foci of necrosis infiltrated with polynuclears. The examination suggests a chronic non-tuberculous inflammatory process.

Nephrolithiasis.
Pyonephrosis.

(A large stone was delivered to the Chemical Laboratory, where examination showed uric acid and phosphates.)

FURTHER DISCUSSION

It is unfortunate that no guineapig test was

done on this urine and that the sediment was examined for tubercle bacilli only once.

Miss Painter says that at this cystoscopy before the second operation urine was taken from the left kidney and injected into a guineapig. Necropsy later showed it to be negative. There is no mention of a guineapig test done on the right urine. They took the evidence already reported as accurate.

He had apparently got on very well following his right nephrectomy until he had an upset a week before he came back in October. The tightness in his flank, his nausea, vomiting, and temperature of course all suggest sepsis in the remaining left kidney; and the description is that of a very sick man in a desperate situation because one kidney is already gone. They waited two weeks hoping that the sepsis would quiet down, in other words, that the kidney would drain itself. But the urine did not clear up and his temperature persisted.

He has a low renal function of twenty per cent.; it is not over a third of what it should be. His non-protein nitrogen is very high, and the uric acid, which is regarded by some as a better indicator than non-protein nitrogen, is 4.32 to 6.28. That is nearly twice what it should be, and is usually interpreted as meaning more advanced and more serious damage to his kidneys than either his nitrogen or his phthalein test would show.

The X-ray again showed evidence of extreme sclerosis. It is possible that the sclerosis may have involved his kidneys to some extent.

The vomiting without relation to meals, the fact that they considered him dried out and started subpectorals, and in addition the laboratory findings, mean of course that the man was getting uremic.

CYSTOSCOPY OCTOBER 26

The bladder was red and edematous at the base. The left ureter was located with great difficulty owing to the fact that it lay behind the interureteric ridge. At intervals thick gelatinous mucopurulent material was seen to gush out. No catheter could be made to enter the ureter, possibly owing to its peculiar position.

FURTHER DISCUSSION

This cystoscopy October 26 was probably an attempt to wash out his kidney with silver nitrate or some other antiseptic to reduce the sepsis. The difficulty in catheterization may have been due to cystitis or perhaps to scar contraction from the excision of the papilloma, which was close to the left ureter. They were apparently driven to operation by his prolonged sepsis and by failure to wash the kidney. As this man has only one kidney the operation must necessarily have been only for drainage. The diagnosis was, I should say, a pyonephrosis rather than a pyelitis or a pyelonephritis.

PRE-OPERATIVE DIAGNOSIS, SECOND ENTRY

Pyonephrosis.

OPERATION OCTOBER 28

Ethylene. A twenty-three centimeter oblique incision was made through the left loin. The tissues were very edematous. The perirenal fat was much thickened and very adherent. The kidney was large and densely adherent to its surroundings. A portion of its greater curvature was exposed and a clamp was thrust through into the pelvis, this opening being enlarged to admit the forefinger. Within the renal pelvis there could be felt a considerable amount of soft material like fibrin which appeared to be free but which could not be removed except for one or two small pieces. A large rubber tube was then passed into the kidney pelvis and sutured in place. There was moderate bleeding. Rubber tissue wick. Wound closed in layers.

PATHOLOGICAL REPORT

Two small pieces of normal looking fat tissue.

FURTHER DISCUSSION

Apparently a few pieces of perirenal fat were removed and were reported as normal. I imagine it was a pretty well thinned-out and distended kidney.

On October 29 there were more evidences of uremia. The hot packs were another measure to fight it.

His non-protein nitrogen was 145 to 130. Here is an instance where the laboratory tests were more accurate than his appearance, which seemed a bit encouraging at the time. The uric acid and creatinin were tremendously increased. These two findings in themselves indicate that the situation is almost certainly a fatal one, because patients with such high uric acid and creatinin practically never get well.

It seems to me that the striking lesson about this man is the neglect of his early symptom of hematuria. Disregard of this extremely important symptom is altogether too often met in urological practice. An effort to diagnose the cause of his blood two years before would probably have saved this man's life. His papillomata if present then were certainly a good deal smaller and could have been fulgurated through a cystoscope. If he had a stone then it must necessarily have been a smaller one with much less infection, and his right kidney could probably have been saved by a pyelotomy. On account of this neglect there was a much increased chance for his left kidney to get infected, both from the focus on the right and by a possible blocking of his left ureter by these papillomata.

It would be interesting to know whether the examination showed any narrowing of the left orifice. They must have sized up the left kidney as a pretty good kidney at the time they took

the right one out,—but he went only six months when he reported with a left kidney shot to pieces. That would suggest that the sepsis was very rapid and might have been hastened by some mechanical process such as the scar contraction from the excision of the papillomata.

The fact that he was in the hands of some irregular practitioner accounts in this case for the neglect of his early symptoms; but it does not account for all the cases we see, by a good deal. The fact that blood in the urine often stops after a short interval makes a patient feel safe and he thinks he can disregard it. Tragedies like this will continue unless the laity and medical men also come to realize that blood in the urine may be just as important as blood from the lungs or blood from the stomach. This patient's life was sacrificed by the "quack" he first employed.

He evidently had a left pyonephrosis, with of course some perirenal infection. He was certainly sclerotic. I imagine that his lungs showed edema and probably pneumonia. These and his uremia were the cause of his death.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Pyonephrosis.

Uremia.

Operation, exploratory, left kidney, with drainage of pelvis.

DR. HARVARD H. CRABTREE'S DIAGNOSIS

Pyonephrosis.

Uremia.

Arteriosclerosis.

Edema of the lungs.

Pneumonia?

ANATOMICAL DIAGNOSIS

1. Primary fatal lesions

(Nephrolithiasis and pyonephrosis of the right kidney.)

Pyonephrosis, suppurative nephritis and suppurative perinephritis of left kidney.

2. Secondary or terminal lesions

Edema of lungs.

3. Historical landmarks

Operation wound.

Old nephrectomy, right.

Chronic pleuritis.

Slight hypertrophy and dilatation of the heart.

Slight arteriosclerosis.

DR. RICHARDSON: There were the operation wounds, one on the left side which was open, and through this opening there were wicks which extended in to the region of the left pelvis, which also had an opening in it. The left kidney showed well marked pyonephrosis, sup-

purative nephritis, and suppurative perinephritis. There was much dilatation of the pelvis and calices. The kidney tissue was riddled with abscesses, and there were collections of pus in the perirenal tissues. The left ureter was in pretty good condition, a little dilated, the mucosa smooth, and it opened freely into the bladder. The bladder was in first-rate condition. There was no definite evidence that he had ever had any papilloma—so that was a very good operation—and no definite cystitis. The pus which was in the ureter and bladder had evidently come from the kidney. In the pelvis of the kidney there was old pus which had collected in concentric layers and formed such firm masses that they looked like concretions.

There was no pneumonia, and only a slight amount of arteriosclerosis, but curiously enough, and it helps the X-ray man out, it was best marked in the iliac vessels. He had slight hypertrophy and dilatation of the heart. The right kidney was wanting. Altogether there was not much good kidney tissue left on the left side, although the mass weighed 480 grams.

DR. COUES: The idea was to try to get some drainage through there, to get his kidney draining out?

DR. CRABTREE: Yes. The pathological report sounds to me as though his kidney had not suffered very much during that six months until immediately before he came in, when it suddenly got shot with multiple abscesses. The papilloma and the scar of its removal, if it did anything, apparently distorted his bladder so that they could not get a catheter into the orifice; but it did not contract it.

NEW YORK CITY'S HEALTH IMPROVEMENT FROM 1900 TO 1925

THE quarter of a century elapsing between 1900-1925 witnessed in the white population of New York City substantial reductions in the principal respiratory diseases; pulmonary tuberculosis, and the pneumonias. In 1900 the death rate per 100,000 white population from pulmonary tuberculosis was 232. By 1925 it was reduced to 67. The pneumonias in 1900 gave a death rate of 300, and by 1925 had fallen down to 127.

The Bright's disease and nephritis rate was also substantially reduced. In 1900 it was 183, in 1925, 82. Although for the first two diseases the reduction is unquestionably valid, the decrease in Bright's disease and nephritis death rate is in part due to the better diagnosis and the more precise recording in death certification practised in recent years. Undoubtedly, many of those that would, in former years, have been recorded as dying of Bright's disease and ne-

phritis, are today charged against the item of organic heart disease.

Despite the phenomenal increase in motor vehicles, and in accidents arising out of their use, deaths by violence have become relatively fewer. In 1900 the rate of deaths by violence per 100,000 white population was 112; in 1925, 95.

Re-stating the above in terms of the per cent decrease in rate from 1900 to 1925, we have pulmonary tuberculosis decreased by 71.1%; pneumonias 57.7%; Bright's disease and nephritis 60%; violence 15.2%.

By contrast, the rates for cancer and for heart disease have both been increased. The cancer death rate for white population in 1900 was 67 per 100,000; in 1925, 109. Heart disease gave a death rate in 1900 of 181, and in 1925, 237. The per cents increase in rate for cancer and for heart disease from 1900 to 1925 was cancer 62.7%; heart disease 115.0%.—*Department of Health, Weekly Bulletin.*

ELECTIONS AND PROMOTIONS AS PUBLISHED BY THE ROCKEFELLER BOARD

The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the election of Dr. Charles R. Stockard as a member of the board.

The following appointments and promotions are announced:

NEW APPOINTMENTS

Associate Members: Dr. John W. Gowen, Professor Duncan A. MacInnes, Dr. Norman R. Stoll.

Associate: Dr. Eggert Möller.

Assistants: Mr. Lawrence R. Blinks, Dr. Philip G. Cohen, Dr. Walter P. Covell, Dr. John A. V. Davies, Dr. Lewis A. Eldridge, Jr., Dr. Jacob Furth, Dr. Donald M. Hetler, Mr. Thomas P. Hughes, Mr. Alfred G. Jacques, Dr. Lawrence S. Kubie, Dr. Eaton M. MacKay, Dr. Julius Sendroy, Mr. Henry Stevens, Dr. Fred W. Stewart, Dr. Alphonse Walti.

Fellows: Mr. Philip R. Averell, Mr. Irving A. Cowperthwaite, Mr. Frederick O. Zillesen.

PROMOTIONS

Associate to Associate Member: Dr. Rudolf W. Glaser, Dr. Philip D. McMaster.

Assistant to Associate: Dr. Charles A. Doan, Dr. Douglas R. Drury, Dr. James A. Hawkins, Dr. Moses Kunitz, Dr. Clara J. Lynch, Dr. Ida W. Pritchett, Dr. Lars A. Welo.

Dr. Albert B. Hastings, hitherto an associate in the Department of the hospital, has accepted an appointment as Professor of Physiological Chemistry at the University of Chicago.

Dr. David I. Hitchcock, hitherto an associate in the Division of General Physiology, has accepted an appointment as Associate Professor of Physiology and Biochemistry at Bryn Mawr College.

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AN AFRICAN EXPEDITION

A HARVARD Expedition has just started for Africa. It is headed by Dr. Richard P. Strong, Professor of Tropical Medicine, with the following staff:

Dr. George C. Shattuck, Assistant Professor of Tropical Medicine.

Dr. Joseph Bequaert, Assistant Professor of Entomology.

Dr. Glover Allen, Lecturer on Zoology in the Museum of Comparative Zoology.

Dr. Max Theiler, Instructor in Tropical Medicine.

Dr. David H. Linder, Botanist.

Loring Whitman, Medical Student and Photographer.

Harold J. Coolidge, Jr., Zoologist.

After completing equipment and arrangements at London and Brussels the party will go first to Liberia, medically a *terra incognita*, to make a medical survey which may have important practical bearing, inasmuch as American interests are starting rubber culture on a large scale to free themselves from British monopoly.

Liberia is about the size of Ohio. The Afro-American population is practically limited to a

twenty-mile strip along parts of the coast. The interior seems to have a considerable population, and from this the labor on the rubber plantations is recruited. The men come down in parties, work for sixty days at a franc a day, and then return. It is stated that some so enjoy the high wages, change of scene and good treatment, that they escape on the return journey and go back to work. Although it seems a well watered country the natives travel only by land. Dr. Strong plans to employ porters, many of whom will be needed for the transport of the scientific instruments, etc., in order to penetrate the interior over as wide an area as possible, making a general survey of human, animal, plant, and insect life. As far as is known the country rises nowhere more than a few thousand feet. So little is known, that on the United States Government map prepared during the late war, several regions are labelled "Cannibal". From Liberia it is planned to ship to and ascend the Congo to its source in or near Lake Tanganyika. Somewhere in this region Dr. Strong plans to study especially,—

I. Tropical non-malarial splenomegaly so rife in his experience in the Philippines and Amazonia, and to unravel its origin and meaning.

II. Lymph-gland enlargement said to be common here, but of, at least, uncertain origin.

III. To try a new French remedy for sleeping sickness, having been plentifully supplied with it by its originator.

The next leg of the trip, exclusively by leg, goes to Nairobi; the last leg by rail is to Mombasa. The equatorial belt of Africa will thus be traversed. There is of course a considerable factor of uncertainty hanging over such an expedition. After getting on the ground it may be necessary or advisable to modify or change preliminary plans. It is reasonable to hope that such a well-manned expedition may result in notable additions to science. The members of the expedition are masters in their several lines of work. They are well equipped and enthusiastic over the adventure. Nine to twelve months are allowed for the trip which holds out high hopes of real contribution to science. It is financed from the modest funds of the Department of Tropical Medicine of the Harvard Medical School, eked out by aid from sympathetic friends.

SUN WORSHIP

DESPITE the fact that Mlle. Lenglen, on her own statement, was unable to play tennis before the Queen of England on account of a germ that she caught in the sun, the sun is coming into increasingly greater prominence as a destroyer of germs, both within and without the human body, and as a preventive of disease. When the practice of insolation will have reached

its optimum degree and run the danger of overstepping that limit we cannot say; perhaps we are already on the threshold of that point which, unfortunately, so many of our honest practices reach when they tend to become fads.

Heliotherapy, in any event, has certainly caught the popular fancy; certain of its benefits are unquestioned and it has been well advertised, first as a cure for suitable types of tuberculosis, more recently as a cure and preventive of rickets; soon, perhaps, its value as a specific in cancer, diabetes and housemaid's knee will be brought before a sun-worshipping public.

Discounting as we must the faddish aspects which sun-treatment is acquiring, we must nevertheless accept as proven the value of the solar rays in the treatment of many infections, notably tuberculosis, and their apparent specificity in rickets. Man cannot live and remain healthy without a certain amount of exposure to the sun's rays, and his tendency has been to deprive himself more and more of their exposures, first by migrating to the less favorable climates in which to make his residence, secondly by oversheltering himself both in the home and at his work. A definite effort at insolation, then, is not the adoption of any new principle; it is simply making an effort at a return to natural and more favorable conditions of life.

Even the savage in his natural surroundings, however, finds it necessary to protect himself from the sun at certain times, and modern man will also find it well to remember that sunbaths like other natural activities such as water drinking, eating and sleeping may be overdone. It is also well to remember that certain types of men will stand insolation better than others; on the whole those who are better pigmented and whose skins will acquire under solar exposure a still further protective pigmentation, are better able to withstand the undesirable effects of overdoses of sunlight.

There is now much preachment over the widely advocated and essentially sound policy of introducing children in their early infancy to the rays of the sun. Rickets, as we know, is a universal disease in the temperate zone, and rickets may be prevented or modified by proper insolation. With the universal acceptance of the policy of sunbaths for the babies comes the necessity of knowing how to go about this procedure in the safest and most effective way, and this practical information is contained in a recent release by the Children's Bureau of the United States Department of Labor.

In this publication the details of the sunbath during both summer and winter are described—the winter indoor bath being given with the sun's rays coming through an open window. All the essential requirements are summarized:

First: To progress slowly, but regularly, starting with a few minutes and working up to two or three hours.

Second: To watch for pigmentation of the skin, avoiding sunburn, and to increase the length of sunbath accordingly.

Third: To expose the arms and legs first and the body afterwards.

Fourth: To use the morning sunlight of spring, summer and fall, and all the available sunlight of winter. In summer the head should be protected from the heat in the middle of the day.

COST OF PRIVATE MEDICAL CARE

THE Committee on Public Health of the King's County Medical Society has recently conducted a study of costs in private medical practice which has been reprinted from the *Long Island Medical Journal*. Conditions in Brooklyn are somewhat unique in that the proportion of general practitioners is higher in Brooklyn than in similar communities in the United States. Thus Brooklyn has 23 per cent. of its practitioners who are specialists, of whom only half are exclusively specialists, in comparison with Boston where 37 per cent. are specialists of whom three-fourths are exclusively specialists. Even in Lowell and Haverhill 34 and 38 per cent. respectively of the physicians practicing are specialists, a higher proportion than in Manhattan and the Bronx, whose specialists number 30 per cent. of the total, with two-thirds of them exclusively specialists.

The usual rates for office and home visits in Brooklyn were determined by this study to be \$2.00 and \$3.00 respectively for general practitioners; \$5.00 and \$10.00 for specialists. The lowest rates found were \$.50 and \$1.00, and the highest \$15.00 and \$25.00. For operations the fees ranged from \$50.00 to \$500.00; for consultations, from \$25.00 to \$100.00. A general feeling was found to exist among the doctors interviewed that there is a great disparity between the fees of specialists and general practitioners.

From the patient's point of view the average family seems ill able to assume the expenses it is liable to incur, of which additional costs amount to over one-half the amount of doctors' fees. The indications seemed to the investigators to be that "in many cases under private medical care the cost of sickness is a considerable burden when measured against the amount available for that purpose in any one year in the average workingmen's family of five, where the family income falls below \$2,500 or \$3,000; that medical fees are fairly uniform for the majority of doctors, but very considerably among a number of them; that the practice of reducing fees prevails generally but is not based upon any reliable method of ascertaining the patient's ability to pay; that reduction of fees appears to occur in less than one-fifth of all cases; and that professional fees amount to less than one-

half of the total expenditures for sickness."

A similar study in some of our Massachusetts communities would be of interest.

THE STATE CANCER CAMPAIGN

THE appropriation by the legislature of one hundred thousand dollars to be used in making such parts of the Norfolk Hospital suitable for the reception of cancer cases has imposed a responsibility on the State Department of Health which Commissioner Bigelow is preparing to meet. He has appointed a large advisory committee which will be subdivided into special committees for the purpose of intensive study of all phases of this project.

On Wednesday, June 23, 1926, Dr. Bigelow took the general committee to inspect the Norfolk Hospital which has not been occupied since the national government decided to give up its lease of the property a couple of years ago.

This plant consists of groups of well constructed buildings, those in one area designed to treat alcohol addicts and in another, some remote area, especially women drug addicts. The institution was developed on a rather magnificent plan and was never used up to its capacity, and finally given up, remaining unoccupied until the Government used it for a short time in caring for the veterans of the late war.

Although there is a definite question as to the advisability of using the Norfolk Hospital permanently, the action of the legislature seems to have imposed a definite commission on the Department which obliges the Commission to at least make an experimental trial of this hospital during the early stage of the campaign against cancer. It was the consensus of the advisory committee that Dr. Bigelow's interpretation of the wish of the State to have this hospital used is correct.

The sub-committees will immediately proceed to study details and submit recommendations to the Commissioner.

ADVISORY CANCER COMMITTEE OF THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

- Mr. Edwin H. Allen, Medical Director, John Hancock Life Insurance Company.
- Dr. Franklin G. Balch, American Society for the Control of Cancer.
- Dr. Walter P. Bowers, Boston Medical and Surgical Journal.
- Mr. W. J. Bell, House Chairman, Legislative Committee on Public Health.
- Dr. Walter L. Burrage, Secretary, Massachusetts Medical Society.
- Miss Ida M. Cannon, Social Service Department, Massachusetts General Hospital.
- Mr. Richard K. Conant, Department of Public Welfare.
- Dr. Francis G. Curtis, Board of Health, Newton.
- Dr. Kendall Emerson, Cancer Committee, Massachusetts Medical Society, Worcester.
- Dr. Robert B. Greenough, Huntington Memorial Hospital.
- Mr. James B. Hayes, St. Mary's Infant Asylum.

Mr. Robert W. Kelso, Boston Council of Social Agencies.

Dr. Francis X. Mahoney, Health Commissioner, Boston Health Department.

Dr. G. Forrest Martin, Trustee, Tewksbury State Infirmary, Lowell.

Rev. George P. O'Connor, Catholic Charitable Bureau.

Miss Gertrude W. Peabody, Massachusetts Association of Directors of Public Health Nursing, Cambridge.

Dr. Henry M. Pollock, Massachusetts Homeopathic Hospital.

Dr. Stephen Rushmore, Dean, Tufts Medical School.
Dr. J. W. Schereschewsky, United States Public Health Service.

Dr. James S. Stone, President, Massachusetts Medical Society.

Dr. William J. Taylor, Massachusetts Homeopathic Hospital.

Dr. E. E. Tyzzer, Harvard Cancer Commission.

Dr. P. E. Truesdale, Cancer Committee, Massachusetts Medical Society, Fall River.

Mr. S. H. Wellman, Massachusetts House of Representatives.

Dr. Edwin B. Wilson, Department of Vital Statistics, Harvard School of Public Health.

Dr. J. Homer Wright, Harvard Cancer Commission.

This committee has been divided into three sub-committees with Chairmen as follows:

Committee on Cancer Clinics, Dr. Greenough.

Committee on Hospitals, Dr. Pollock.

Committee on Cancer Investigations, Prof. Wilson.

Other sub-committees will be formed as indicated.

PSYCHO-PHYSICAL OR ?

IN last week's issue, page 52, may be found a copy of Senate Resolution No. 255, setting forth the Senate action appropriating \$2000 per annum for the anthropological, psycho-physical and statistical study of human beings. Since twenty-five senators and seventy-five representatives have already submitted to examination, it may be expected that a continued study along this line may bring out interesting facts relating to the mental behavior of members of congress. We may be pardoned for suspecting that the work may be a recondescence of the phrenology of former years which was regarded with derision by some able men.

This interpretation of MacDonald's work is fairly suggested by the statement that "From the head measurements it will be possible to estimate the average weight of brain of state and national legislatures." We have suspected that quality of brain substance is to be desired above volume, for we have known persons with expansive brows and good sized heads who were better fitted for mental occupation than making laws.

If it should be found that there are bumps indicating acquisitive power, it would explain the presence in Congress of some who are able to contribute large sums to nomination or election expenses and who have exerted little influ-

ence on sound legislation. We shall be surprised if some of the noisy members do not show irregular skull conformation with protrusion of the loquacious area, if such is found to exist. Such members have been of value to certain interested groups in carrying on the time honored filibuster.

It is suggested that the results of further research will enable critics of our political parties to make intelligent comparisons of these organizations. This is utopian, for if evolution brings about sufficient mass intelligence to be guided by a dependable analysis of the capacities and purposes of political parties, an election can be expected to provide the nation with the service which will best meet its needs. Modest merit will be recognized rather than the size of a bank account.

All hail to the Moses who will lead us to this promised land! All of those living on this planet at the present time must feel the keenest regret that they are not likely to participate in the glories of this political millenium.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:—

CATTELL, RICHARD B., A.B.; M.D. Harvard Medical School 1925; Member of the Lahey Clinic, Boston; now at St. Luke's Hospital, New York. His subject is "The Elimination of the Iodine in the Urine in Normal Persons and in Exophthalmic Goiter," page 69.

LANMAN THOMAS H., M.D. Harvard Medical School 1916; F.A.C.S.; Junior Assistant Visiting Surgeon, Children's Hospital, Boston; Member, N. E. Pediatric Society. His subject is "The Age of Choice for Operations of Choice in Infancy and Childhood," page 72. Address: 286 Marlborough St., Boston.

MENDENHALL, WALTER L., M.D. Drake University College of Medicine, Des Moines, Ia., 1906; Professor of Pharmacy, Boston University School of Medicine;

MCCLEURE, CHARLES W., M.D. Ohio State University College of Medicine 1910; Chief of the Gastroenterological Research Division of the Department of Biochemistry and Gastroenterology to the Evans Memorial; Gastroenterologist to the Out-Patient Department, Homeopathic Hospital; and

CATE MILDRED, S.B. They write on "Cholagogic Properties of Magnesium Sulphate," page 76. Address: Evans Memorial, Boston.

OTIS, EDWARD O., A.B.; M.D. Harvard Medical School 1877; Sc.D. Tufts College and University of New Hampshire; Professor of Pulmonary Diseases and Climatology, Tufts College Medical School; Consulting Physician, Boston Dispensary, etc. His subject is "The

Symptomatic Treatment of Tuberculosis," with discussions, page 80. Address: 381 Beacon St., Boston.

HUBER, EDWARD G., A.B.; M.D.; Dr.P.H.; Major in Medical Corps, U. S. A. His subject is "The Control of Communicable Diseases Prevalent in Massachusetts with a Study of Mortality Due to Them During the Past Seventy-Five Years," page 87. Address: War Department, Washington, D. C.

MISCELLANY

A MEMORIAL TO DR. WILLIAM BEAUMONT

DR. BEAUMONT, an army surgeon, cared for Alexis St. Martin who had a gastric fistula through which experiments were conducted which paved the way to a better understanding of stomach digestion. Samples of gastric juice were collected and sent to Professor Silliman at Yale College. Some samples were sent to medical men in Europe. The results of the work of Beaumont were published in many text books.

Dr. Beaumont was born in Lebanon, Connecticut. A club exists for the purpose of perpetuating the achievements of Dr. Beaumont. This club arranged to have a memorial tablet set upon a boulder taken from the Beaumont farm which was presented to the Town of Lebanon June 29, 1926. Professor Lafayette B. Mendell, Sterling Professor of Medicine in Yale Medical School, is President of the Beaumont Club. Russell H. Chittenden, Director Emeritus of Sheffield Scientific School delivered the address.

A LARGE PLAN FOR ADDING TO THE CAMPAIGN AGAINST CANCER

A NEW YORK Association composed of physicians and laymen has undertaken the raising of two million dollars for the creation of a hospital which will be devoted to research in the field of cancer.

Sandres A. Worthen is President and Dr. Isaac Levin is Medical Director and will have associated with him Drs. Samuel A. Brown of the New York University Medical College and President of the Academy of Medicine of New York; Dr. George D. Steward, President of the Medical Board of Bellevue Hospital; Dr. William H. Park, President of the American Health Association; Dr. Holmes C. Jackson of the Faculty of the Medical College of the City of New York; Dr. Barnet Josephs and Dr. Alfred D. Osgood.

Seventy-five thousand dollars has already been subscribed and the active work for the two million will be in full swing in September.

MASSACHUSETTS DEPARTMENT OF PUBLIC
HEALTH

DISEASES REPORTED FOR THE WEEKS ENDING
JUNE 19 AND 26, 1926

	Weeks ending June 19 June 26	
Anterior poliomyelitis.....	1	—
Chickenpox.....	149	167
Diphtheria.....	60	67
Dog-bite.....	4	15
Encephalitis lethargica.....	1	3
Epidemic cerebrospinal meningitis	—	4
German measles.....	256	132
Gonorrhea.....	61	118
Influenza.....	3	8
Measles.....	537	580
Mumps.....	157	105
Ophthalmia neonatorum.....	21	5
Pneumonia, lobar.....	61	60
Scarlet fever.....	210	191
Septic sore throat.....	—	1
Suppurative conjunctivitis.....	3	11
Syphilis.....	31	38
Tetanus.....	—	1
Trachoma.....	1	1
Trichinosis.....	—	2
Tuberculosis, pulmonary.....	107	138
Tuberculosis, other forms.....	22	18
Tuberculosis, hilum.....	4	5
Typhoid fever.....	13	6
Whooping cough.....	148	172

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING
JUNE 19, 1926

Diphtheria.....	15	Chickenpox.....	92
Last week.....	9	Favus.....	1
Diphtheria bacilli		German measles.....	19
carriers.....	2	Influenza.....	2
Whooping cough.....	53	Mumps.....	8
Last week.....	44	Pneumonia, lobar.....	38
Typhoid fever.....	3	Septic sore throat.....	1
Last week.....	3	Tuberculosis, pulmo-	
Scarlet fever.....	78	nary.....	42
Last week.....	79	Tuberculosis, other	
Measles.....	349	forms.....	2
Last week.....	444	Gonorrhea.....	9
Bronchopneumonia.....	24	Syphilis.....	17
Cerebrospinal menin-			
gitis.....	2		

NEWS ITEMS

DR. REID HUNT TO TRAVEL ABROAD—Dr. Hunt will leave July 15 to attend the meeting of the International Physiological Congress at Stockholm.

DR. FRANCIS P. MCCARTHY RETURNS—Dr. Francis P. McCarthy has returned from Miami Beach Fla., and has opened his office at 375 Commonwealth Avenue.

APPOINTMENTS OF DR. AUSTIN W. CHEEVER—Dr. Austin W. Cheever has recently been appointed syphilologist at the Florence Crittenton Home, dermatologist at the Cambridge Hospital, and chief of the Department of Skin and Syphilis at the Boston Dispensary.

HONORARY DEGREES GRANTED TO PHYSICIANS—Harvard University has conferred the degree of Doctor of Science upon Dr. William Lambert Richardson, formerly Dean of the Faculty of Medicine, especially in recognition of his work in the

Lying-in Hospital, thereby making an epoch in the practice of obstetrics; also the degree of Doctor of Laws upon Dr. George Gray Sears because of his memorable work in promoting the mutual helpfulness of the Medical School and hospital.

THE BOSTON FLOATING HOSPITAL—The first trip for this season was made June 29 and the work will continue until September 15. Orthopedic and heliotherapy work will be especial features of the service. The ship accommodates about 115 babies. The trip is completed at 4.30 P. M. and visitors are allowed on board after that time.

NOTICES

BIOGRAPHICAL MATERIAL DESIRED

MR. H. M. FOSTER, 100 Hudson St., New York City, is collecting biographical articles about his father, Dr. Frank P. Foster, deceased, who was for thirty-one years Editor of the *New York Medical Journal*. Mr. Foster intends to publish a biographical book and would like to have sent to him any letters, anecdotes or other material relating to Dr. Foster which may be suitable for this publication.

AN ANNOUNCEMENT

The New England Health Institute for the year 1926 will be held in Concord during Sept. 27-Oct. 1.

Presented by:

United States Public Health Service
State Health Departments of New England
Yale and Harvard Schools of Public Health
Departments of Biology and Public Health of:
Massachusetts Institute of Technology
Simmons College

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

Trained Nurse
Trained Nurse (Psychiatric)

Applications for these positions must be on file at Washington, D. C., not later than August 7. The date for assembling of competitors will be stated on the admission cards sent applicants after the close of receipt of applications.

The examinations are to fill vacancies in the Panama Canal Service.

The entrance salary for female nurses is \$120 a month, with promotion at the end of each year of service of \$5 a month until the maximum of \$135 a month is reached. The entrance salary for male nurses is \$125 a month, with promotion at the end of each year of service of \$5 a month until a maximum of \$140 a month is reached.

The entrance salary for female nurses (psychiatric) is \$135 a month, with promotion at the end of each year of service of \$5 a month until a maximum of \$150 a month is reached. The entrance salary for male nurses (psychiatric) is \$140 a month, with promotion at the end of each year of service of \$5 a month until a maximum of \$155 a month is reached. Competitors will be rated on practical questions

in anatomy, hygiene, and nursing; and their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of United States Civil Service Examiners at the postoffice or custom house in any city.

REPORTS AND NOTICES OF MEETINGS

MEETING OF NEW ENGLAND TUBERCULOSIS SECRETARIES

FIGURES revealing New England as one of the healthiest sections of the United States were made public at the semi-annual meeting of the New England Tuberculosis Secretaries held at Burlington, Vt., on June 22. The figures, prepared by the statistical staff of the National Tuberculosis Association and based on reports of the U. S. Census Bureau, show the average length of life for the New England area to be 48.7 years for 1924 in comparison to 45.6 years for the entire United States registration area. Vermont leads the New England states with an average length of life of 54.9 years. The secretaries voted to cooperate in popularizing New England as a health resort.

John A. Kiernan, Director of the Division of Tuberculosis, U. S. Bureau of Animal Industry, spoke on the work of his division in radiating bovine tuberculosis.

Most of the tuberculosis affecting cattle in this country came to the eastern and New England states when herds were imported, according to Dr. Kiernan, and then spread across the country with the development of the great cattle regions of the west and middle west. The work of the division is to test all cattle in the country, with the cooperation of the farmers, the states, counties, and towns. When diseased cattle are discovered they are exterminated. This is the only successful method of controlling tuberculosis in cattle.

The Conference discussed plans for the New England Health Institute to be held in Concord, N. H., during the week of September 26, 1926. This Institute is held under the leadership of the Departments of Health of the New England states. Miss Bernice B. Billings, R.N., Executive Secretary of the Boston Tuberculosis Association is general chairman of the Tuberculosis Section of the Conference. Dr. Henry D. Chadwick of the Massachusetts State Department of Public Health will be in charge of the Clinical Section, Miss Bernice Billings will be in charge of the Nursing Section, and Frank Kiernan, Executive Secretary of the Massachusetts Tuberculosis League, will be in charge of the Social Service Section. A round table discussion will be held on the subject of the 1926 Christmas Seal sale. A leading tuberculosis specialist from Saranac Lake, New York, will

read the principal paper in the Clinical Section.

The secretaries also discussed the possibilities of an institute for tuberculosis workers to be held under the joint auspices of the National Tuberculosis Association and the New England Tuberculosis Secretaries in Boston during January or February of 1927. Discussion was also held on the subject of the International and National Tuberculosis Conventions in Washington in September and October of this year.

Frank Kiernan of Boston outlined the success achieved in Massachusetts through the National Health Play writing contest. Two of the prize winning plays in Massachusetts received awards in the National contest conducted by the National Tuberculosis Association.

The secretaries voted to hold their next meeting at Augusta, Maine, in the week of August 30th. This will be held in conjunction with the meeting of the Three Quarter Century Club of the Maine Public Health Association.

Those attending the meeting were Walter D. Thurber, Executive Secretary of the Maine Public Health Association, president; Frank Kiernan, Executive Secretary of the Massachusetts Tuberculosis League, secretary; Willis E. Chandler, Executive Secretary of the Rhode Island Tuberculosis Association; Miss Mabel Baird, Secretary of the Connecticut Tuberculosis Commission; Dr. Robert B. Kerr, Executive Secretary of the New Hampshire Tuberculosis Association; Mrs. Mary B. Davis, Manchester, N. H.; Miss Marion L. Garland, Claremont, N. H.; Miss Elena M. Crough, R.N., Concord, N. H.; Miss Cluffie M. Gobie, Laconia, N. H.; Harold W. Slocum, Executive Secretary of the Vermont Tuberculosis Association; Dr. John A. Kiernan, Director of the Division of Tuberculosis, U. S. Bureau of Animal Industry; James G. Stone of the National Tuberculosis Association; and Thomas Magner of Burlington, President of the Vermont Tuberculosis Association.

BOOK REVIEW

Thomas Sydenham, Clinician. By DAVID RIESMAN, M.D. New York, Paul B. Hoeber, 1926.

This little book of fifty-two pages is practically a reprint of a paper on the same subject appearing in the *Annals of Medical History*, June, 1925. The life of Sydenham is briefly reviewed, emphasis being placed on his extraordinary achievements in clinical medicine without the aid of our modern instruments of precision. Nothing new is added to what is already well known in regard to Sydenham's life. A useful bibliography of the works of Sydenham completes the small volume. The book is well printed and bound.